# Appendix A
# Credentials and Experience

# Appendix B
# Statistical Calculations for Two Performance Measures – Completion Interval - Provisioning and Maintenance Average Duration

A very important underlying assumption is that the data are the result of a designed experiment, where the "treatments" are assigned randomly to the units of analysis. Any confounding factors or possible blocking effects are taken into account in the design of the experiment and all other assignments are randomized in order to remove bias due to any remaining systematic differences in the units.

For example, in agricultural experiments, location is often considered a blocking effect. Plots that are close together tend to give similar yields due to otherwise uncontrolled effects, such as drainage and fertility gradients. Treatments are assigned at random to plots within each block.

The block effect may be on the mean (fixed effect) or on the variance (random effect), describing correlations between units that are physically close to each other. In this case, we do not have a controlled experiment and this should add an extra note of caution, as emphasized elsewhere.

Consider the simplest general model for the two population comparison. Let $x_{1i}$ denote the performance measurement on BST order i, i=1,...,$n_1$. Let $x_{2j}$ denote a performance measurement on a CLEC order, j=1,...,$n_2$. Then the most basic model is

$$x_{1i} = \mu + \varepsilon_i \qquad \text{where } \varepsilon_i \sim \text{IID}(0, \sigma_1^2)$$
$$x_{2j} = \mu + \tau + \delta_j \text{ where } \delta_j \sim \text{IID}(0, \sigma_2^2)$$

and the two means $\bar{x}_1$ and $\bar{x}_2$ are independent. If the underlying distributions are not too skewed and the sample size is reasonably large, then one can reasonably approximate the distribution of the difference in the means as normally distributed

$$\bar{x}_1 - \bar{x}_2 \sim N(\tau, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}) \qquad (1)$$

and we are interested in testing whether $\tau = 0$.

FCC Measure. In addition, it can be assumed that the variances are the same in each case, $\sigma_1^2 = \sigma_2^2 = \sigma^2$. That is, it is assumed that the two distributions are the same, except for a possible difference in the means, due to a "treatment" effect.

These are the assumptions used in the FCC measure. A pooled estimate of the variance is used, $s_p^2$, and the resulting t-test is

$$t = \frac{\bar{x}_1 - \bar{x}_2}{s_p \sqrt{1/n_1 + 1/n_2}}$$

with $n_1 + n_2 - 2$ degrees of freedom. It often turns out to be the case that the sample sizes will be large enough so that the normal, or Z, distribution can be used rather than the t-distribution.

In at least some cases in the Louisiana data that we have studied, it does not appear that the assumption of equal variance is valid. There are two other measures that are being

The first step in the data analysis was to verify the data set. This was done by calculating the estimates and comparing them to the published estimates on the BST internet website (https://clec.bellsouth.com).

Trimming. The underlying distribution of the orders is clearly not normal, but rather skewed with a very long upper-tail. (See Appendices C and D.) Extreme data values may be correct, but since they are rare measurements, they may be considered to be statistical outliers. Or they may be values that should not be in the analysis data set because of errors in the measurement or in selecting the data.

The arithmetic average is extremely sensitive to outliers; a single large value, possibly an erroneous value, can significantly distort the mean value. And by inflating the error variance, this also affects conclusions about whether $\tau = 0$. A useful technique, coming from the field of robust statistical analysis -- for example Huber (1981), or Wiens, Wu, Zhou, (1998) -- is to trim a very small proportion from the tails of the distribution before calculating the means. The resulting mean is referred to as a trimmed mean. Trimming is beneficial in that it speeds the convergence of the distribution of the means to a normal distribution. Only extreme values are trimmed, and in many cases the data being trimmed are, in fact, data that might not be used in the analysis on other grounds.

In the first analysis of the verified Completion Interval-Provisioning measure, after removing data that were clearly in error or were not applicable, we looked at the cases that represented the largest 0.01% of the BST distribution. In the August data, this corresponded to orders with completion intervals greater than 99 days. All of these were BellSouth orders.

In examining the largest 11 individual examples that would be removed from analysis, we found that only 1 of the 11 cases was a valid case where the completion interval was unusually large. The other 10 cases were examples of cases that should not have been included in the analysis.

Of the 11 largest values, eight were orders which are "official BellSouth orders"; these are internal jobs which are not real orders but which needed an order number for tracking purposes. These orders can be identified using the data field "general class service" and such orders were subsequently removed from the analysis data file.

Two of the cases were orders where the customer requested a later due date than offered by BellSouth. The customer called in February to place an order for August, for example. There is no easy way to identify such cases in general, in order to remove them from analysis.[1] The system is not yet stable; hence, there may be other types of data points that should not be included or that are not measured correctly. A very slight trimming is needed in order to put the central limit theorem argument on firm ground.

[1] As a result of our analysis, we eliminated further records from data analysis, both above and below the 99 days, using the information regarding general class of service (official BellSouth orders). The subsequent trimming only removed 15 BST cases from the August BST file and 13 BST cases in September.

of "new" vs "change" vs "transfer". It appears, for instance, that a "new" order takes noticeably longer to finish than a "change" or "transfer."

Finally, if one were designing a study to compare the CLEC to the BST "treatment," one would make sure that the same number of CLEC and BST cases were assigned by the location, by time, and by the type of order. By using random assignment to assign a population unit as either a CLEC or a BST, one would be protected against the possibility of other unsuspected sources of bias. That is, if there is another variable that affects the performance measure, by using random assignment one is likely to assign approximately the same proportion of BST and CLEC orders across the distribution of this variable.

Without random assignment, there is the possibility that the distribution of these confounding variables is very different for the BST orders than for the CLEC. For example, if "new" service tends to take longer than the other service types and one month 50% of the CLEC orders are "new" compared to 25% of the BST orders, then the simple comparison will be biased. The bias may work in either direction, depending on the distribution of the observed data. In the example above, the simple estimate would overestimate the difference between the BST and the CLEC performance, making the CLEC customer performance look worse than that for BST customers since CLEC provisioning would appear to take longer. If the distribution had been out of balance in the other direction, with a higher percentage of new BST orders than new CLEC orders, then the simple estimate would have made the CLEC performance look better than it was.

In summary, the assumptions made for both the FCC and the LCUG tests are not valid. The observations are not likely to be independent and identically distributed. Assumption failures may affect both the numerator (the point estimate of the difference) and the denominator (the estimate of its variability). Clustering effects in the data, resulting in a positive correlation between observations in the same wire center, would mean that the variance estimates used in both the FCC and the LCUG measures are biased. And, in particular, they will underestimate the variability in the differences. In addition, effects due to time or order type may bias the estimate of difference.

Adjusted Estimates. In an observational study, bias is a major concern. There are many references for estimation techniques using data from observational studies. There are two principal strategies for reducing bias in observational studies (Cochran and Rubin, 1973): matching and model related adjustments. When the confounding variables are classification measurements, as they are in this case (new vs. change, time 1 vs. time 2 etc), then both matching and model based strategies lead essentially to the same simple adjustment.

Suppose there are j=1,...,J classes defined by the confounding variables. (One class might be new service in a residence, dispatched service, with less than 10 circuits, finished in time period 1, in wire center "a." ) Suppose there are $n_{2j}$ CLEC cases and $n_{1j}$ BST cases in class j with $n_{2j} \geq 0$. The following

provider, the mean is 2 days for class j=1, new orders, and the mean is 1 day for class 2, change orders.

Suppose we want to adjust provider A's distribution to compare to provider B. Then in the notation used in this appendix, we have

$n_{11}=30,\ n_{12}=90,\ n_1=120$

$n_{21}=60,\ n_{22}=30,\ n_2=90$

Using equation (3), the estimate of the difference would be

$$\hat{D} = \frac{60*(2-2)+30*(1-1)}{90} = 0.$$

The unadjusted means are 1.25 for provider A and 1.67 for provider B. The adjusted mean for provider A would be calculated using weights $w_j = n_{2j}/n_{1j}$, or in this case

$w_1 = 60/30 = 2$
$w_2 = 30/90 = 1/3$

and the adjusted mean for provider A would be

$$\bar{x}_{1A} = \frac{2*30*2+\frac{1}{3}*90*1}{2*30+90/3} = 1.67.$$

Because there was no discrepancy in the means, by class, the adjusted mean for provider A is equal to the mean for provider B.

**Replicate Variance Estimation**

The estimate $\hat{D}$ from equation (3) or (4) then is a better estimate of the difference between the mean performance for the BST orders and the mean performance for the CLEC orders. We now need a variance estimate for $\hat{D}$.

Replicate variance estimation can result in a nearly unbiased estimate of the variance for complex data structures like those which exist with the BellSouth data. A description of the basic technique can be found in Wolter (1985). The basic idea is to randomly divide the given sample into G groups, where each group has approximately the same number of wire centers. In each group g, calculate an estimate of the parameter of interest, say $\bar{d}_g$. Let $\bar{\bar{d}}$ be the average of the replicate means $\bar{d}_g$. Then the replicate variance estimate of $\bar{\bar{d}}$ is

$$v_1 = \mathrm{Var}(\bar{\bar{d}}) = \frac{1}{G}\frac{1}{(G-1)}\sum_g (\bar{d}_g - \bar{\bar{d}})^2 \quad . \quad (5)$$

In our problem, however, the estimate we are interested in is $\hat{D}$ which is not generally equal to $\bar{\bar{d}}$. We can use $v_1$ as an estimate of $\hat{D}$ or the alternative estimator

$$v_2 = \mathrm{Var}(\hat{D}) = \frac{1}{G}\frac{1}{(G-1)}\sum_g (\bar{d}_g - \hat{D})^2 \quad . \quad (6)$$

activity. The LATA were ordered and the wire centers were ordered within LATA. Within the first LATA, the wire centers were ordered from largest to smallest. In the next LATA, the wire centers were ordered from smallest to largest, etc. We then systematically divided the 232 wire centers into 30 roughly equal groups (of about 7 wire centers). This was done by taking the ordered list and splitting it into "zones" of 30 wire centers each, randomly assigning a wire center to a group until all were assigned, then repeating the process independently for the next zone of 30 wire centers, and so on until all had been assigned.

Estimator Construction. The estimator $\hat{D}$ is calculated as in equation (3), using classes defined by wire center and time at least. The replicates are assigned, by wire center. The adjusted replicate estimates $\bar{d}_{Ag}$, g= 1,.. 30, are calculated using equation (3) but summing only over the cases in the wire centers defined to be in replicate g.

These $\bar{d}_{Ag}$ are identically distributed by construction and independent by randomization. If there is a lot of CLEC activity, they may also be approximately normally distributed. Using the replicate structure we estimate the variance for the adjusted estimate as

$$s_{rA}^2 = \frac{1}{29}\sum_{g=1}^{30}\left(\bar{d}_{Ag} - \hat{D}\right)^2$$

and the resulting statistic

$$t = \frac{\hat{D}}{s_{rA}/\sqrt{30}}$$

is compared to the Student's t-distribution with 29 degrees of freedom, as the reference distribution, for calculating p-values. The p-values are the probability of seeing a value as extreme or more extreme then the observed value of $t$. That is, if $t$ is positive, the probability of a value greater than or equal to $t$ is calculated, using the Student's t with 29 degrees of freedom as the reference distribution. If $t$ is negative, the probability of a value less than or equal to the observed $t$ is calculated.

Using the replicate variance estimate applied to the adjusted estimate of the difference protects against model misspecification. This test does not rely on the assumption that the data are IID and it corrects for bias due to the structure of the data. Using this method, a confidence interval can be constructed for the difference in the means. A reasonable interval is the 95% confidence interval. Using a Z-test, the multiplier is 1.96 which is often rounded up to 2.00. Using a t-distribution with 29 degrees of freedom, the coefficient is 2.045. For all practical purposes, these are equivalent. There is no loss in power in adopting the replicate measure over the FCC or the LCUG measure.

**The Six Test Statistics Compared in the Main Report**

The test statistic described in the previous section is the method we propose for the comparisons, and, in the main report, it is referred to as the BellSouth test for adjusted data. It adjusts the BellSouth data to make it more similar in

**Performance Measured as a Proportion**

If the performance measure is a proportion or a percentage of cases which possess some characteristic, such as the proportion of orders taking less than two days to finish, then these methods also apply. It may not be immediately obvious, but proportions can be placed in the same framework as sample means.

A proportion can be calculated by measuring a variable $x_i$ for each case, where $x_i$=1 if the unit has the characteristic of interest (less than 2 days to complete, for example) and $x_i$=0 if the unit does not have the characteristic of interest. If we have n cases, then the proportion p of orders with the characteristic of interest is calculated as the mean of the x values, $\bar{x}$.

In this way, the tests can be formulated for proportions using the equations given in this appendix. For example, the sample means within classes become $p_{1j}$ and $p_{2j}$, the proportion of BellSouth orders and CLEC orders, respectively, in class j. The adjusted estimate of the difference is then

$$\hat{D} = \sum_j n_{2j}(p_{1j} - p_{2j}) \Big/ n_2$$

**Outline for the Proposed Replicate Data Analysis**

The proposed BellSouth procedure is the replicate method applied to the adjusted data. The steps in the data analysis and test calculation that we propose can be summarized as follows:

1. Verify that we have the correct data set, by comparing to the published estimates on the BST internet website (https://clec.bellsouth.com).
2. Remove any additional data values that are not pertinent to analysis (official BellSouth orders for example)
3. If necessary, trim a very small proportion from the tail(s) of the distribution. (In some cases, the original BellSouth data procedure already included an upper or lower bound on data to be used for analysis.)
4. Put the replicate indicator on the data file and define the time classification.
5. Determine if there are other important classifications that should be used as well, such as order type.
6. For every class defined in steps 4 and 5, calculate the difference $d_j = \bar{x}_{1j} - \bar{x}_{2j}$. In one pass through the data files, a file can be built containing $n_{2j}$, $n_{1j}$, and $d_j$ for all classes j.
7. From this data file, estimates of the difference in means and t-tests to test the hypothesis of nondiscriminatory treatment can be calculated for any level of aggregation at the LATA level and above.

Rosenbaum, P. (1987), The Role of a Second Control Group in an Observational Study, *Statistical Science*, **2**, 292-316

Snedecor, G. and Cochran, W. (1967), *Statistical Methods*, Iowa State University Press, Ames, Iowa.

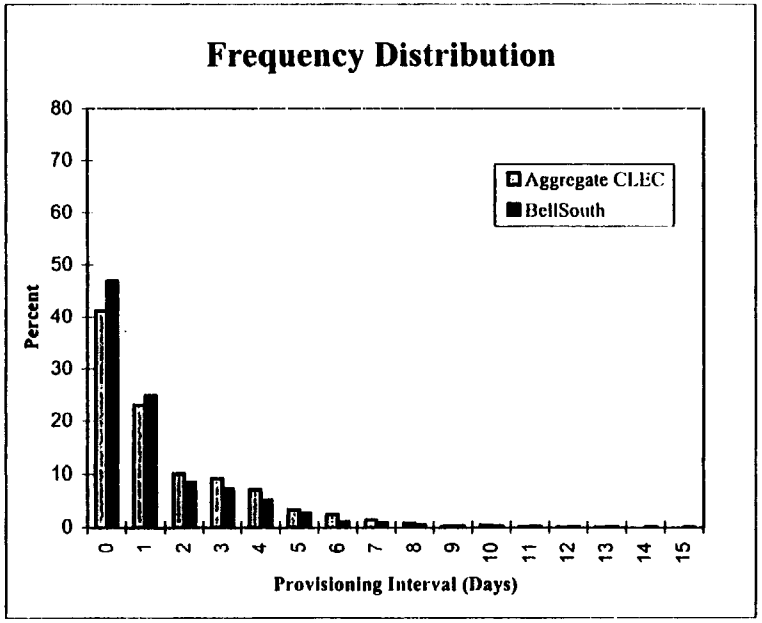
Wiens, D.P., Wu, E.K.H, and Zhou, J. (1998), On the trimmed mean and minimax-variance L-estimation in Kolmogorov neighborhoods, *The Canadian Journal of Statistics*, **26**, 231-238.

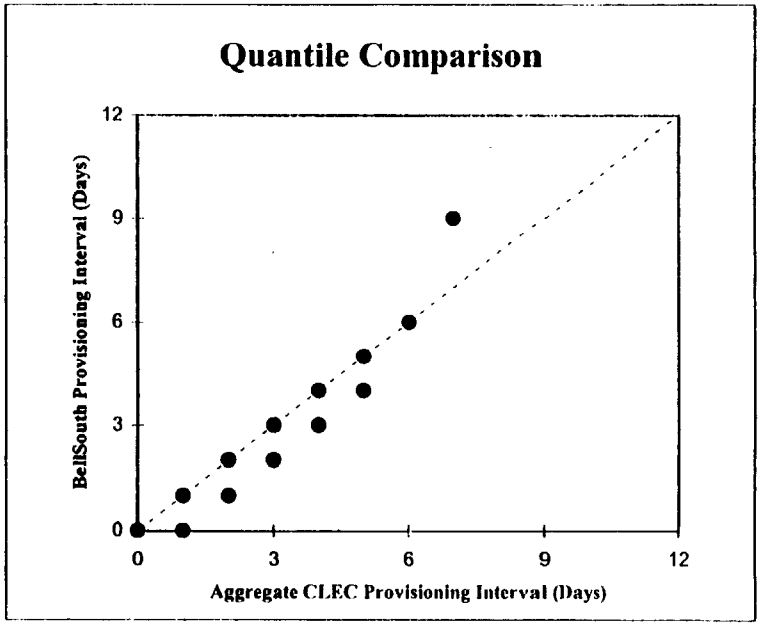
Wolter, K. (1985), *Introduction to Variance Estimation*, Springer-Verlag, New York.s

# Appendix C
# Order Completion Interval (OCI) - August Graphics

I. Graphical Representations

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## All Cases




### Descriptive Measures

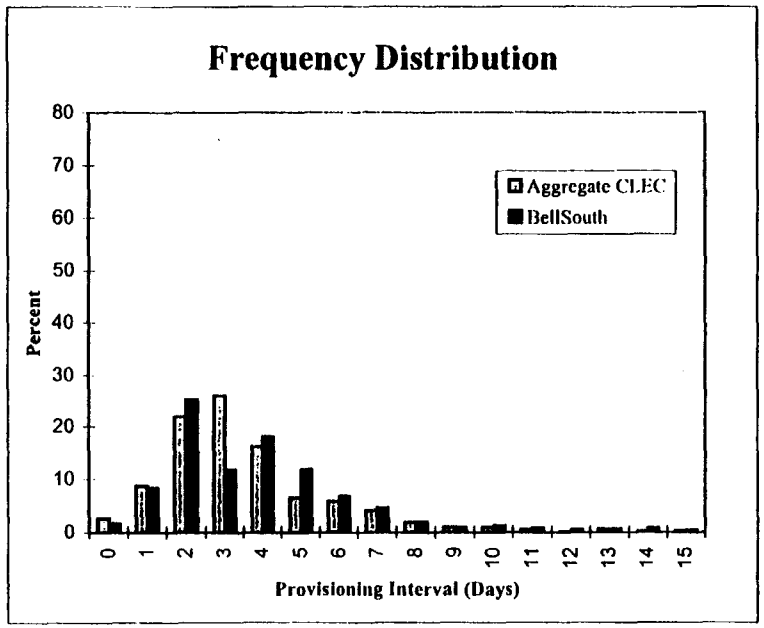
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.48 | 2.95 |
| CLEC | 1.62 | 2.26 |
| Difference | -0.14 | |

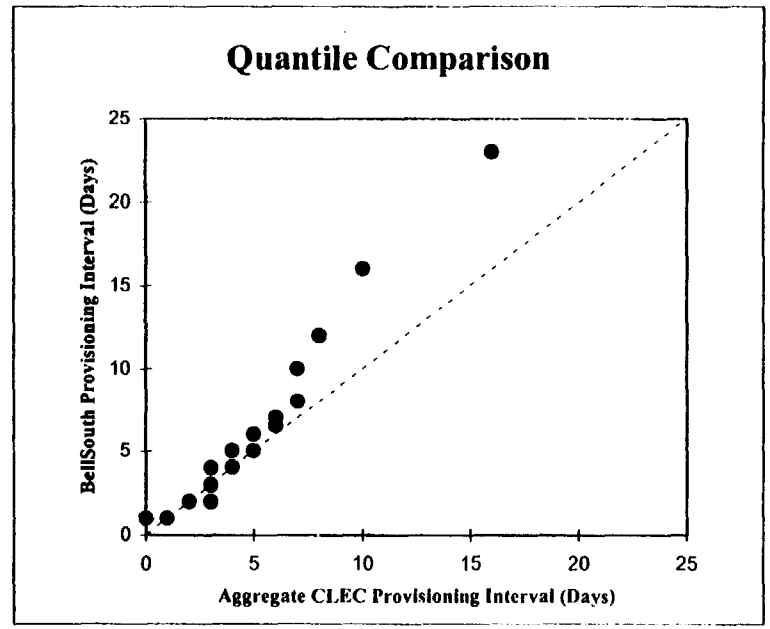
### Analytic Measures

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -6.08 | 0.0000 |
| FCC | -6.13 | 0.0000 |
| BST | -2.57 | 0.7774 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Dispatched Cases




**Descriptive Measures**

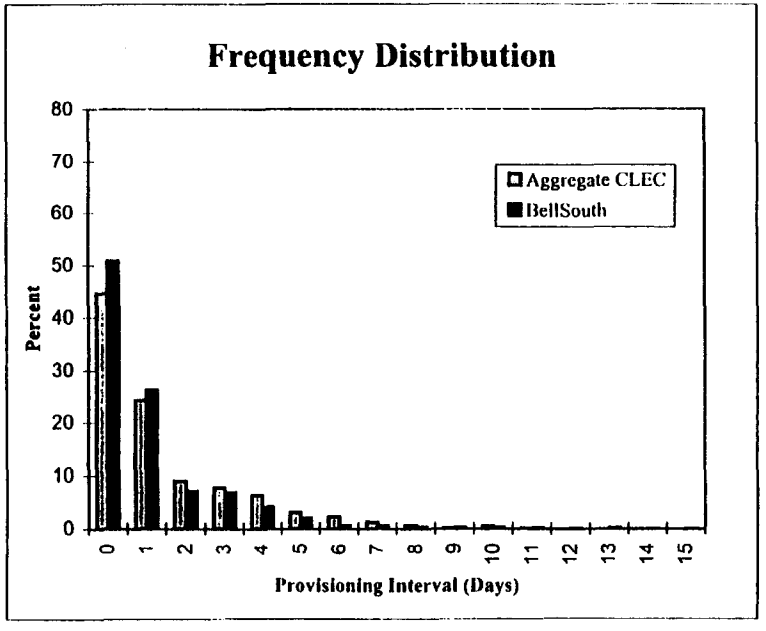
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 4.88 | 5.84 |
| CLEC | 3.99 | 3.77 |
| Difference | 0.89 | |

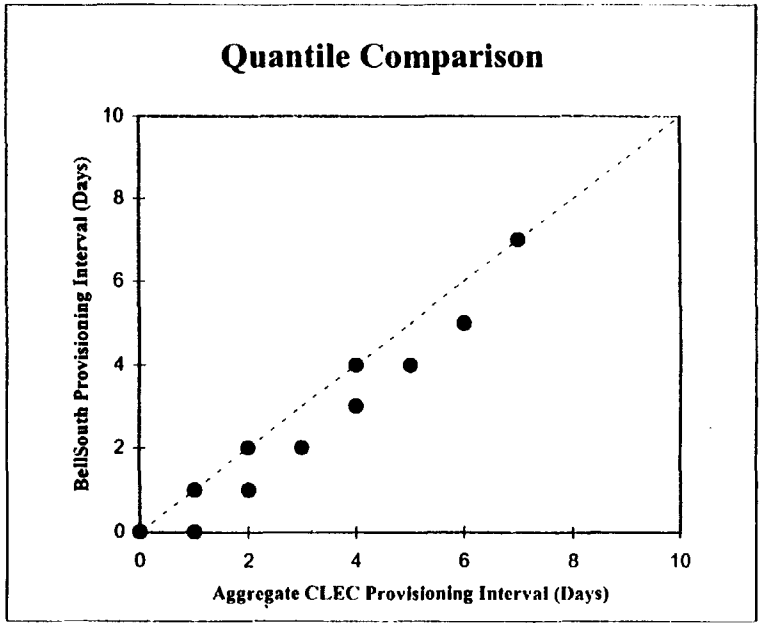
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 5.34 | 0.0000 |
| FCC | 5.42 | 0.0000 |
| BST | 6.41 | 0.0000 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched Cases




**Descriptive Measures**

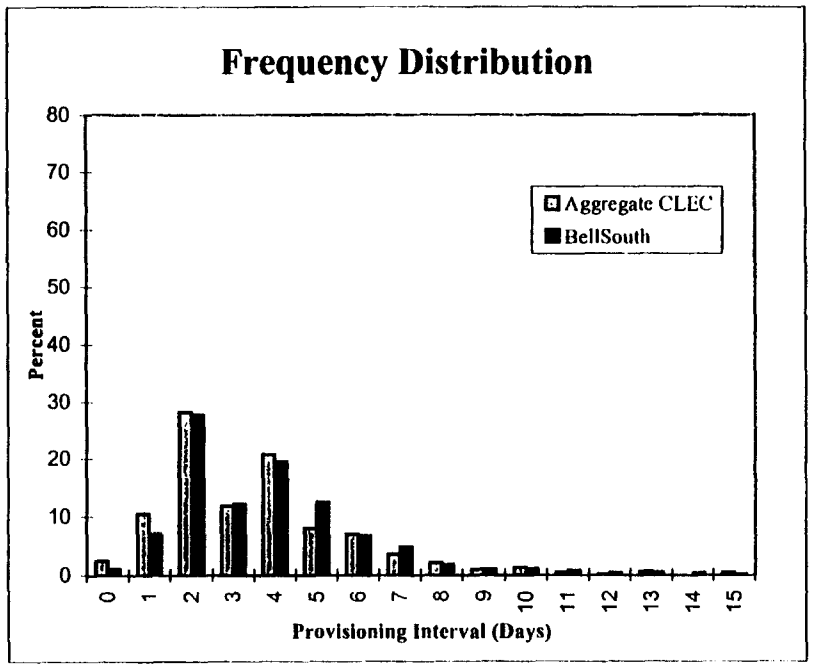
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.18 | 2.33 |
| CLEC | 1.41 | 1.94 |
| Difference | -0.23 | |

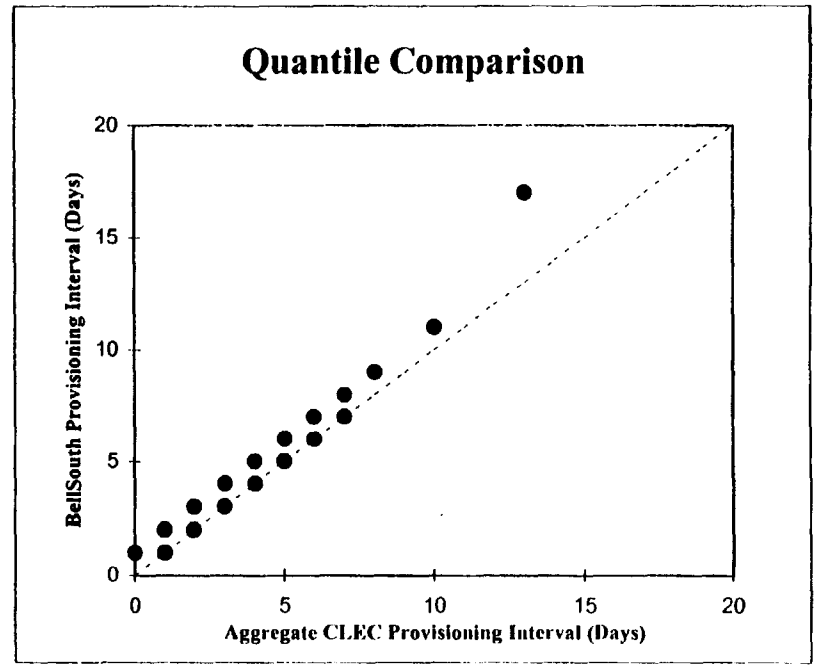
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -11.86 | 0.0000 |
| FCC | -11.93 | 0.0000 |
| BST | -4.39 | 0.0068 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Residential, All Circuits




**Descriptive Measures**

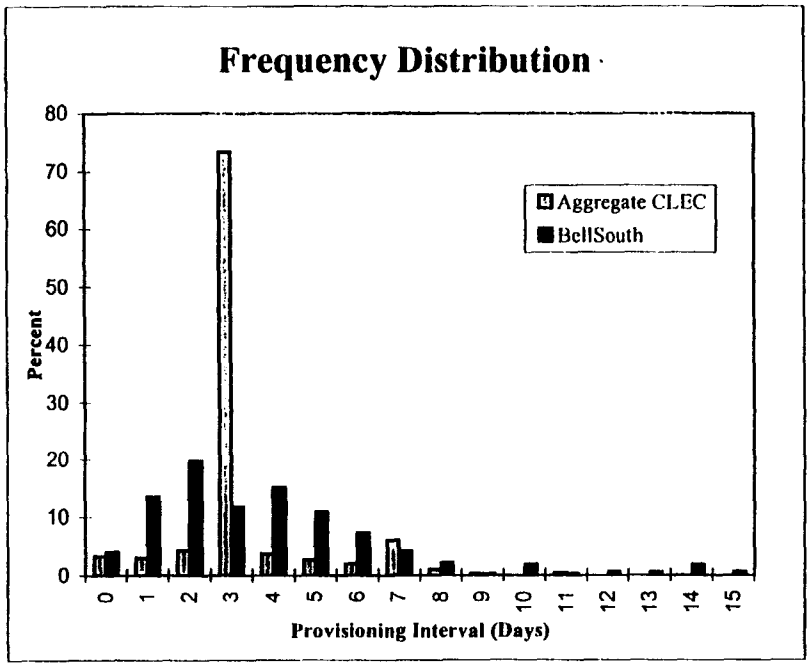
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 4.34 | 4.19 |
| CLEC | 3.84 | 3.38 |
| Difference | 0.50 | |

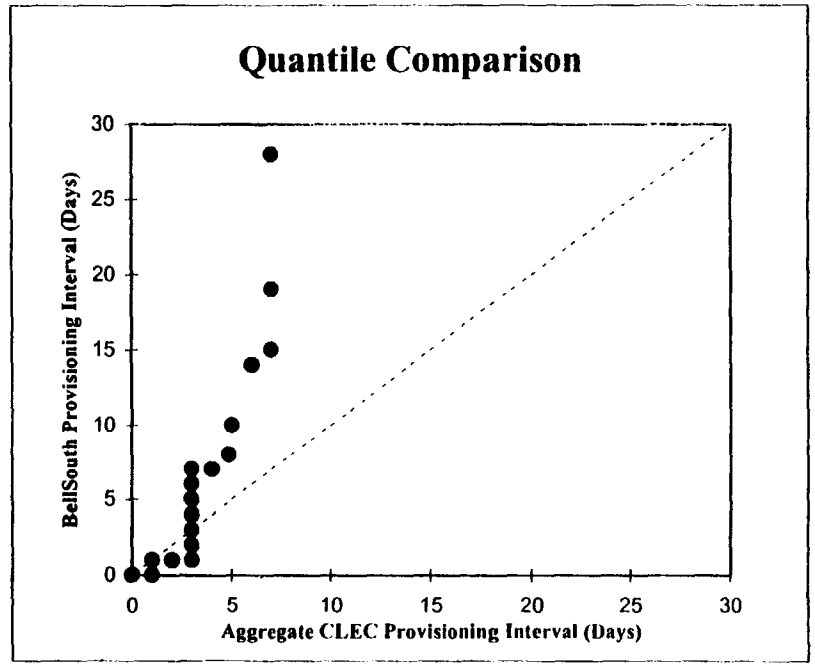
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 3.60 | 0.0159 |
| FCC | 3.63 | 0.0139 |
| BST | 4.40 | 0.0067 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Business, All Circuits




**Descriptive Measures**

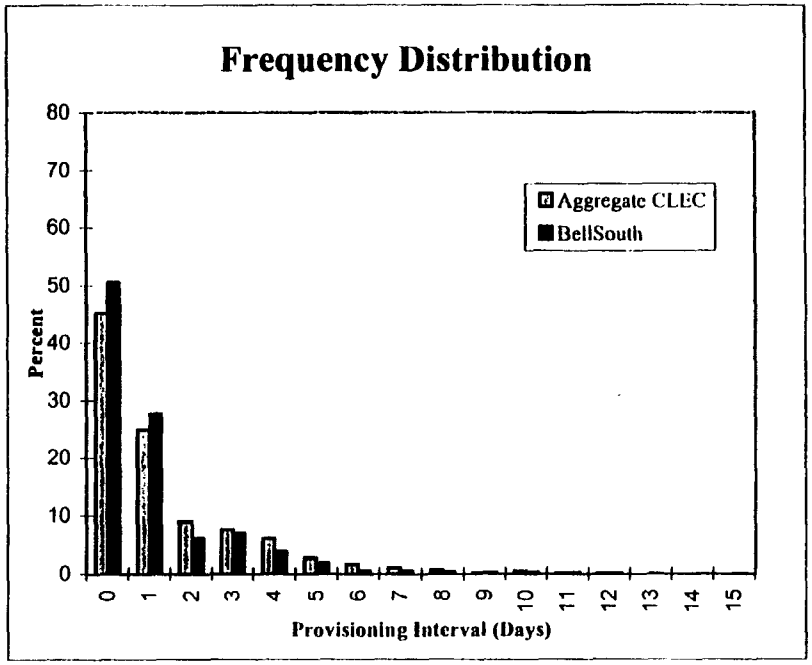
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 5.27 | 7.25 |
| CLEC | 3.28 | 1.50 |
| Difference | 1.99 | |

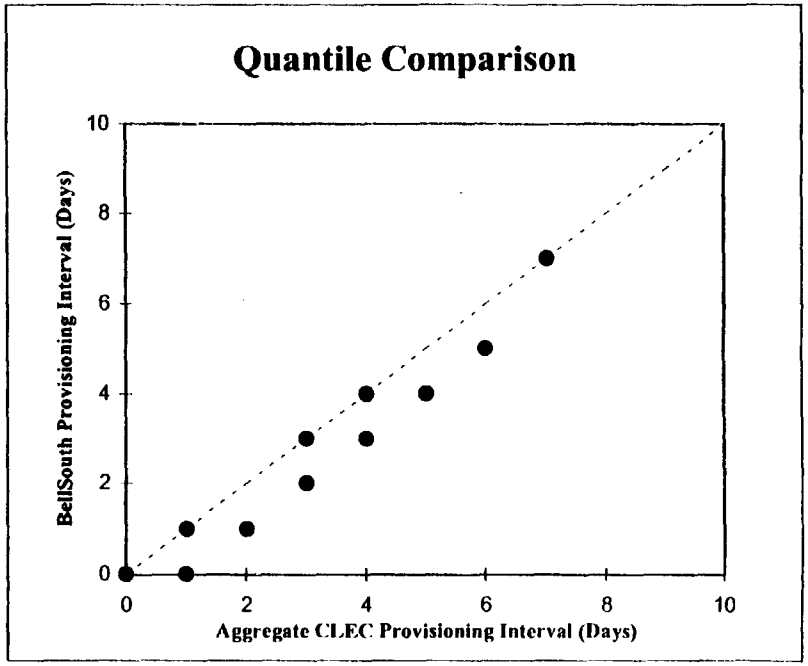
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 4.63 | 0.0002 |
| FCC | 4.75 | 0.0001 |
| BST | 2.48 | 0.9762 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Residential, All Circuits




**Descriptive Measures**

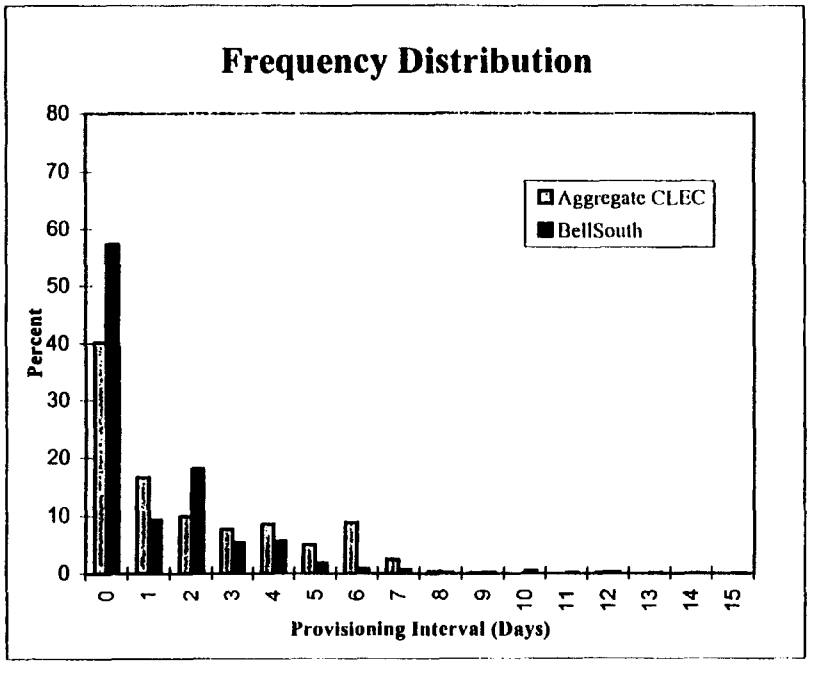
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.15 | 2.26 |
| CLEC | 1.35 | 1.87 |
| Difference | -0.20 | |

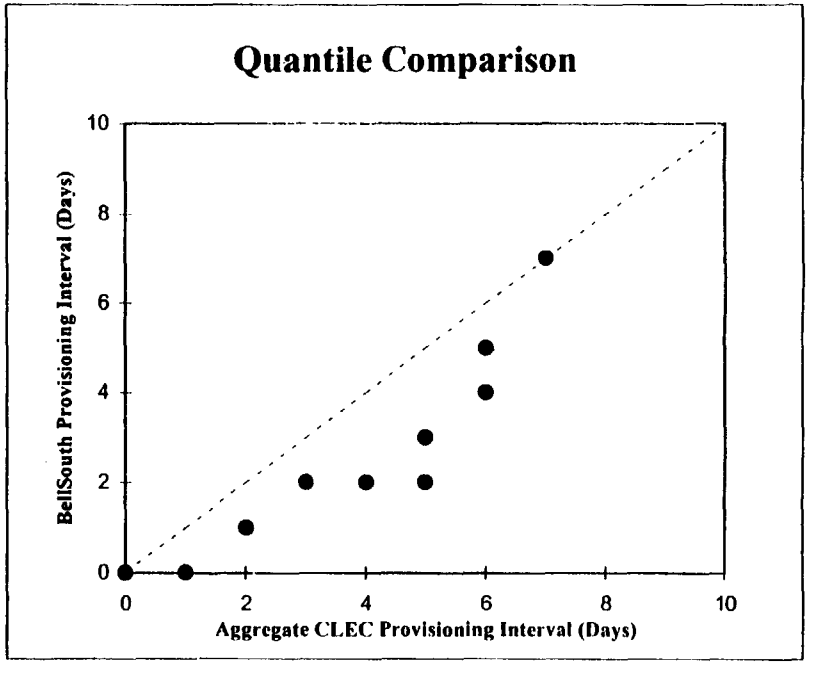
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -10.38 | 0.0000 |
| FCC | -10.44 | 0.0000 |
| BST | -4.41 | 0.0066 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Business, All Circuits




**Descriptive Measures**

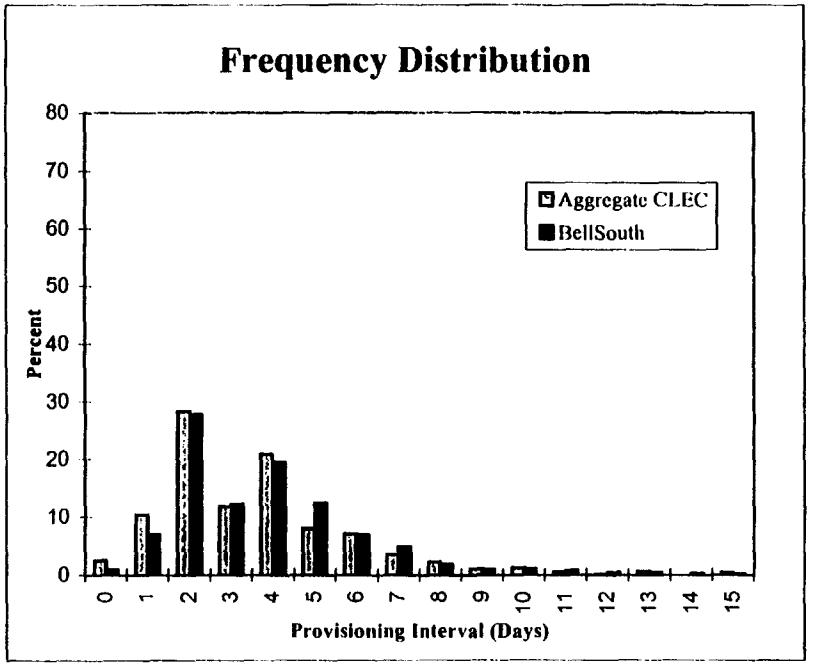
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.20 | 2.47 |
| CLEC | 1.98 | 2.37 |
| Difference | -0.78 | |

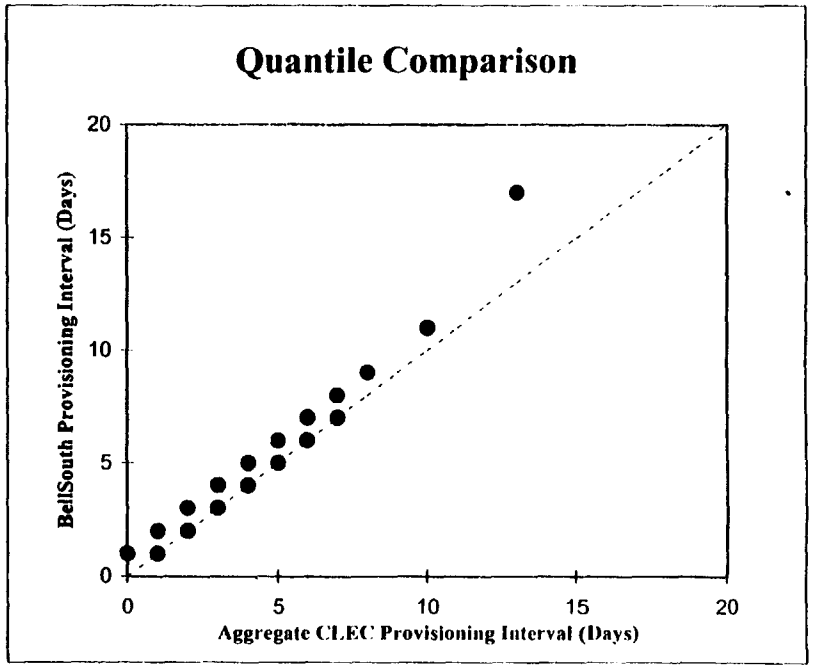
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -10.42 | 0.0000 |
| FCC | -10.43 | 0.0000 |
| BST | -3.55 | 0.0686 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Residential, Less Than 10 Circuits




**Descriptive Measures**

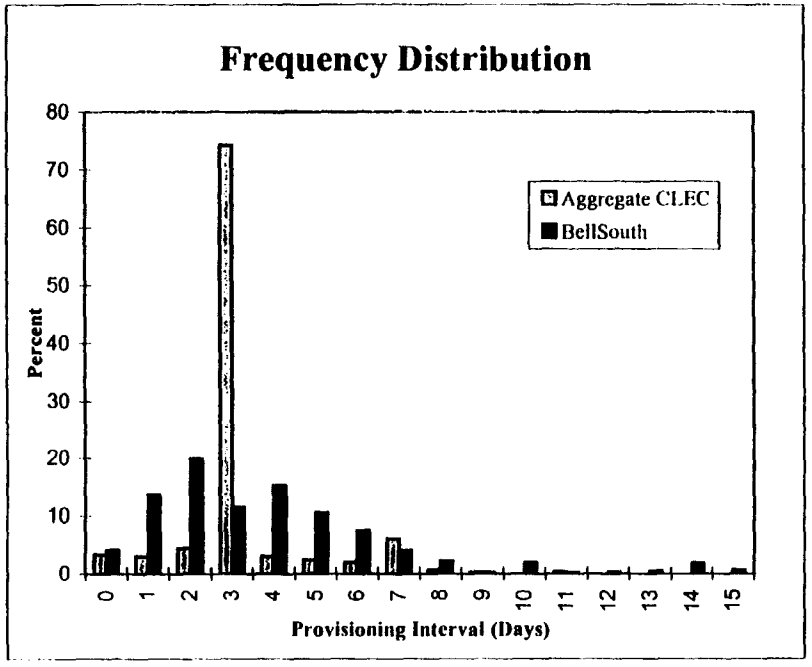
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 4.34 | 4.17 |
| CLEC | 3.85 | 3.39 |
| Difference | 0.49 | |

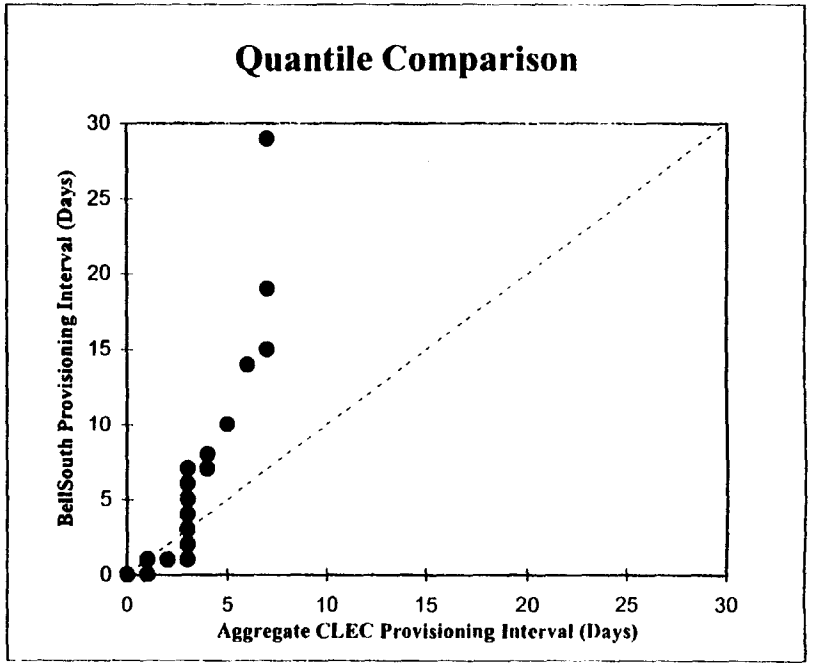
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 3.53 | 0.0210 |
| FCC | 3.56 | 0.0185 |
| BST | 4.40 | 0.0068 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Business, Less Than 10 Circuits




### Descriptive Measures

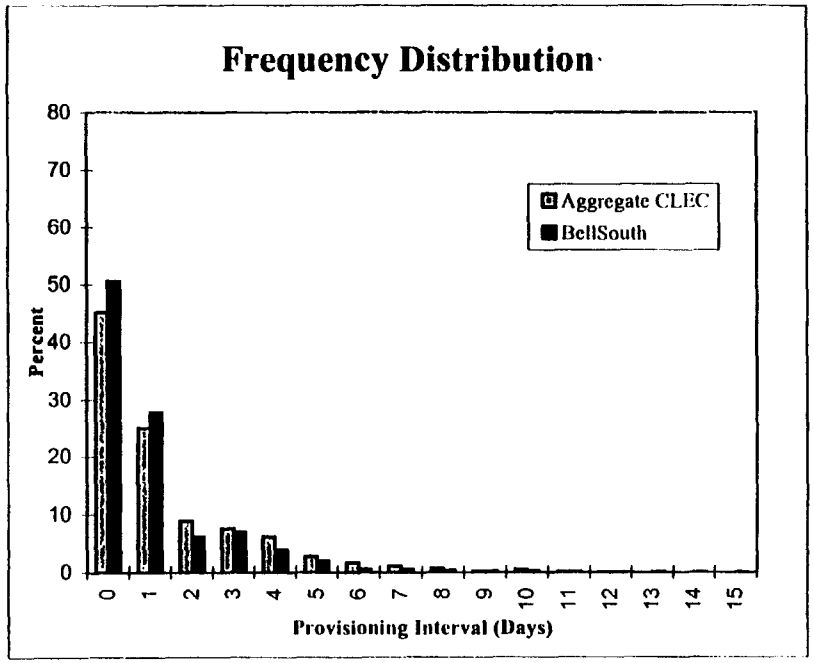
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 5.26 | 7.29 |
| CLEC | 3.26 | 1.48 |
| Difference | 2.00 | |

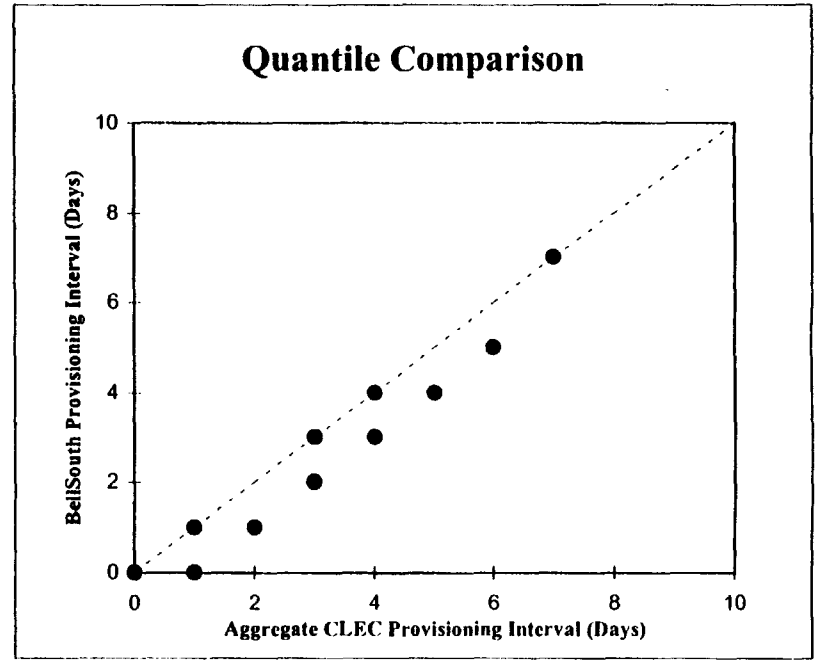
### Analytic Measures

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 4.59 | 0.0002 |
| FCC | 4.71 | 0.0001 |
| BST | 2.50 | 0.9451 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# August BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Residential, Less Than 10 Circuits




**Descriptive Measures**

| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.15 | 2.26 |
| CLEC | 1.35 | 1.87 |
| Difference | -0.20 | |

**Analytic Measures**

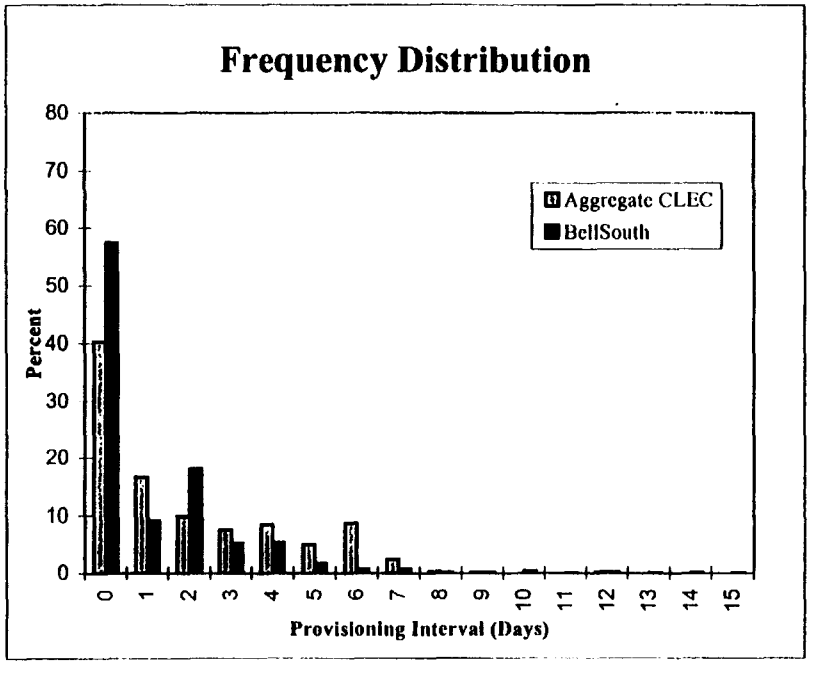
| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -10.38 | 0.0000 |
| FCC | -10.44 | 0.0000 |
| BST | -4.41 | 0.0066 |

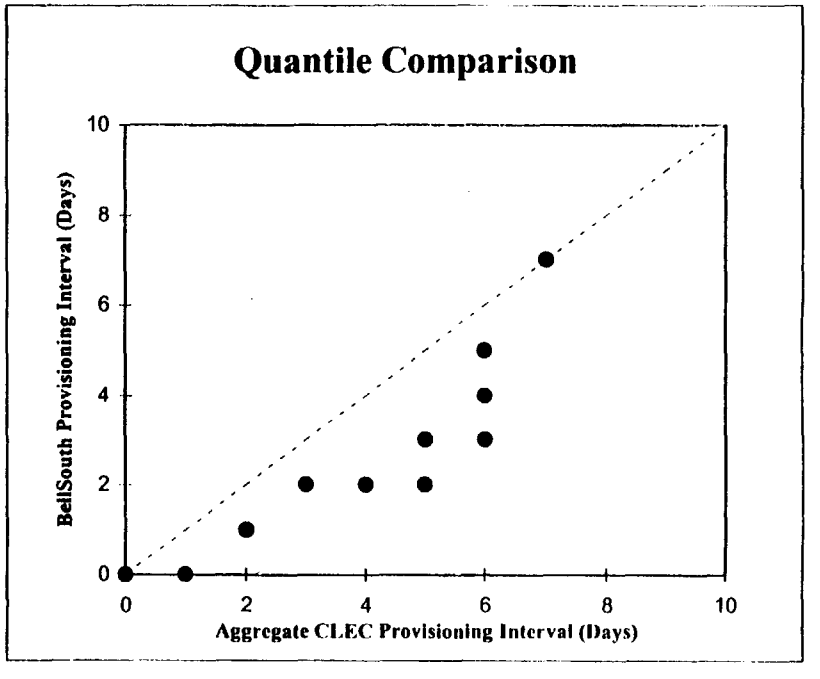
*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted

# August BellSouth and CLEC Completion Interval-Provisioning

## Non-Dispatched, Business, Less Than 10 Circuits




**Descriptive Measures**

| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.19 | 2.46 |
| CLEC | 1.97 | 2.37 |
| Difference | -0.78 | |

**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -10.44 | 0.0000 |
| FCC | -10.46 | 0.0000 |
| BST | -3.57 | 0.0660 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# SQM: Order Completion Interval

**AUGUST**

| | NO DISPATCH | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAME DAY | | 1 DAY | | 2 DAYS | | 3 DAYS | | 4 DAYS | | 5 DAYS | | > 5 DAYS | | AVG. (DAYS) | |
| | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts |
| CLEC 1 | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| CLEC AGGREGATE | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RESALE RESIDENCE | 44.84% | 0.00% | 24.94% | 0.00% | 9.08% | 0.00% | 7.95% | 0.00% | 6.20% | 0.00% | 2.81% | 0.00% | 4.18% | 0.00% | 1.38 | 0.00 |
| - RESALE BUSINESS | 40.00% | 0.00% | 17.32% | 0.00% | 10.64% | 20.00% | 7.78% | 20.00% | 8.12% | 20.00% | 5.02% | 0.00% | 11.21% | 40.00% | 1.93 | 4.20 |
| - UNE LOOPS WITH LNP | | | | | | | | | | | | | | | | |
| BST | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RETAIL RESIDENCE | 58.29% | 0.00% | 24.08% | 0.00% | 4.66% | 0.00% | 6.80% | 0.00% | 2.89% | 0.00% | 1.67% | 0.00% | 1.62% | 0.00% | 0.92 | 0.00 |
| - RETAIL BUSINESS | 64.32% | 26.88% | 9.88% | 18.28% | 13.88% | 4.30% | 4.34% | 15.05% | 4.92% | 7.53% | 0.84% | 2.15% | 1.83% | 25.81% | 1.05 | 7.27 |

| | NO DISPATCH | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 DAYS | | 6-10 DAYS | | 11-15 DAYS | | 16-20 DAYS | | 21-25 DAYS | | 26-30 DAYS | | > 30 DAYS | | AVG. (DAYS) | |
| | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts |
| CLEC 1 | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| CLEC AGGREGATE | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RESALE DESIGN | 80.68% | 0.00% | 17.05% | 0.00% | 0.00% | 0.00% | 1.14% | 0.00% | 0.00% | 0.00% | 1.14% | 0.00% | 0.00% | 0.00% | 3.91 | 0.00 |
| - UNE DESIGN | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00 | 0.00 |
| - UNE NON-DESIGN | 77.78% | 0.00% | 0.00% | 0.00% | 11.11% | 0.00% | 0.00% | 0.00% | 11.11% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 4.67 | 0.00 |
| BST | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RETAIL DESIGN | 28.57% | 0.00% | 15.87% | 0.00% | 26.98% | 0.00% | 6.35% | 0.00% | 4.76% | 0.00% | 1.59% | 0.00% | 15.87% | 0.00% | 19.14 | 0.00 |

**Definitions**

**issue date -- Date service order is entered into the system (not necessarily same as application date)**

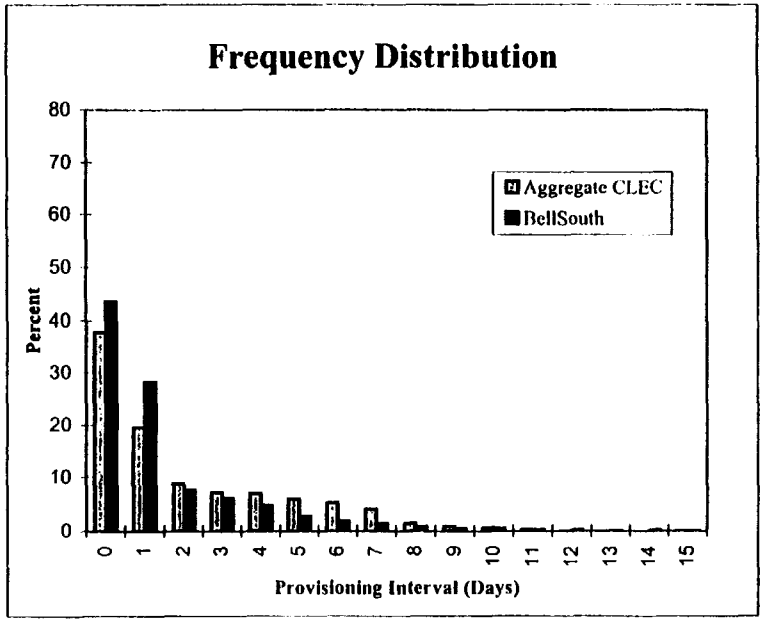
**completion date -- Date on which service order is completed**

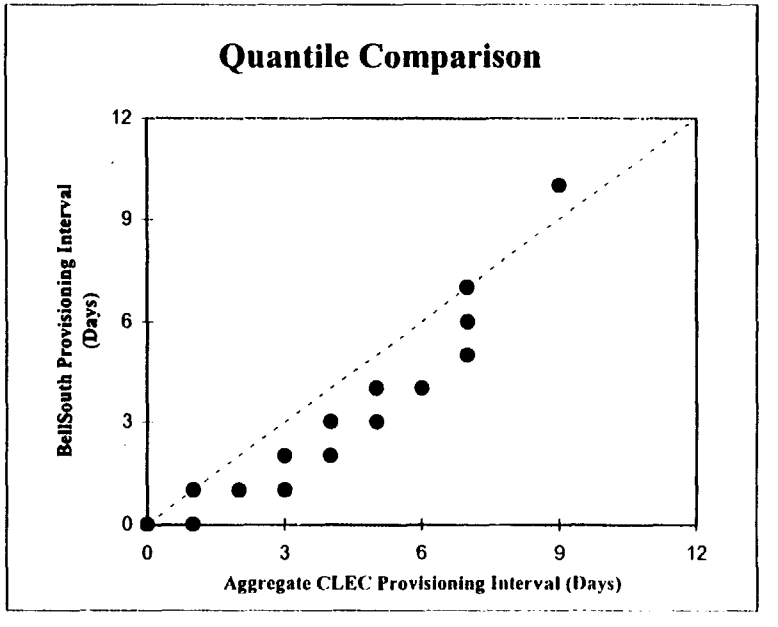
**order completion interval -- computed as order completion interval = completion date - issue date**

# Appendix D
# Order Completion Interval (OCI) - September Graphics

I. Graphical Representations

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## All Cases




**Descriptive Measures**

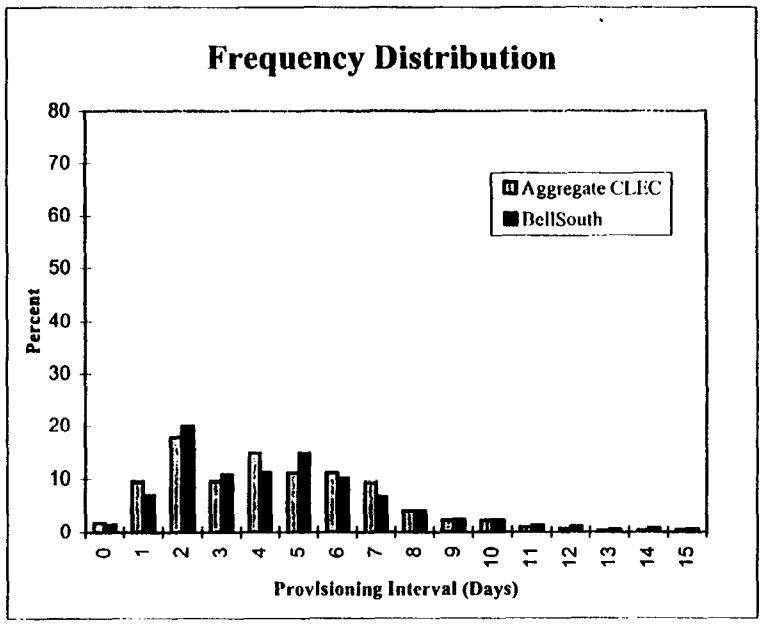
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.61 | 3.00 |
| CLEC | 2.20 | 2.85 |
| Difference | -0.59 | |

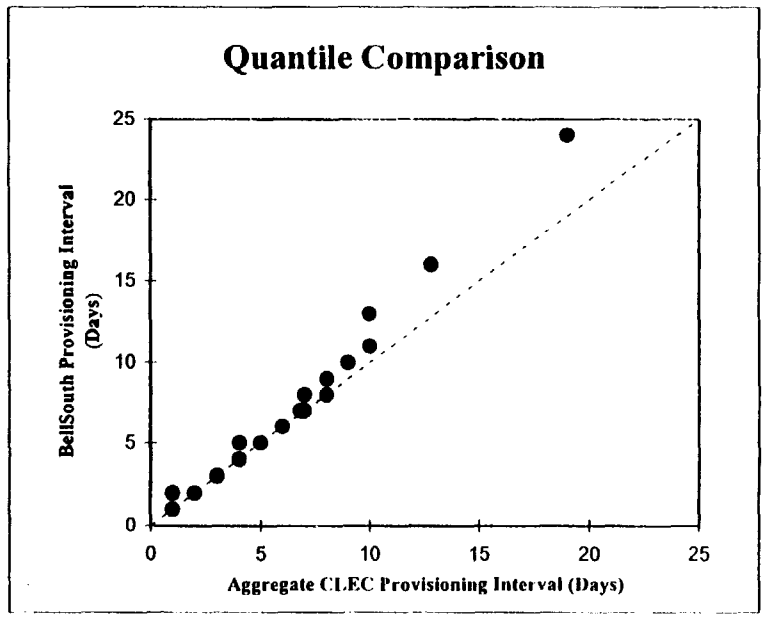
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -24.63 | 0.0000 |
| FCC | -24.68 | 0.0000 |
| BST | -8.81 | 0.0000 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Dispatched Cases




**Descriptive Measures**

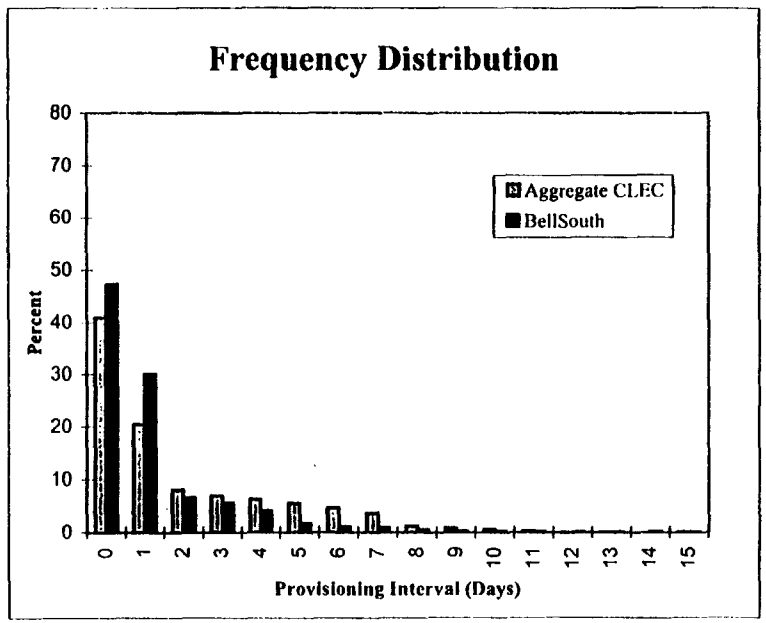
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 5.52 | 5.59 |
| CLEC | 5.07 | 4.55 |
| Difference | 0.45 | |

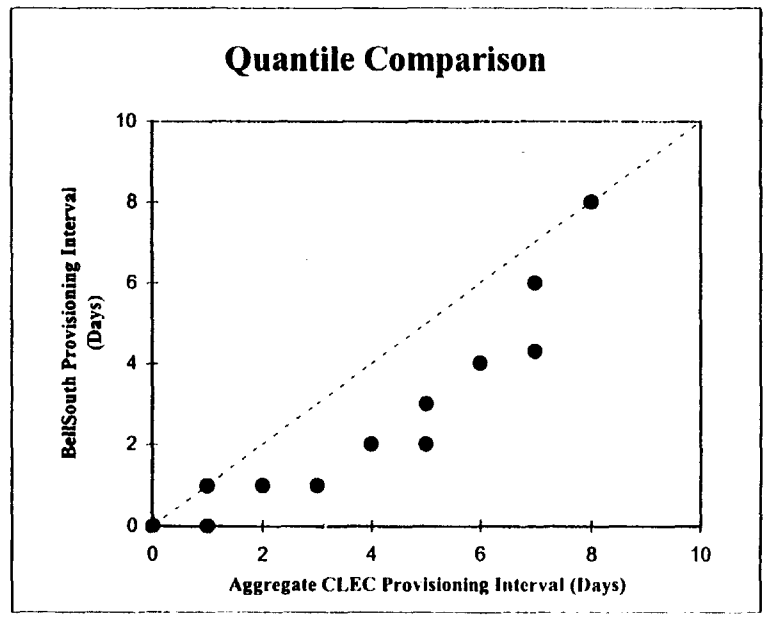
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 2.87 | 0.2065 |
| FCC | 2.90 | 0.1884 |
| BST | 2.57 | 0.7876 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched Cases




**Descriptive Measures**

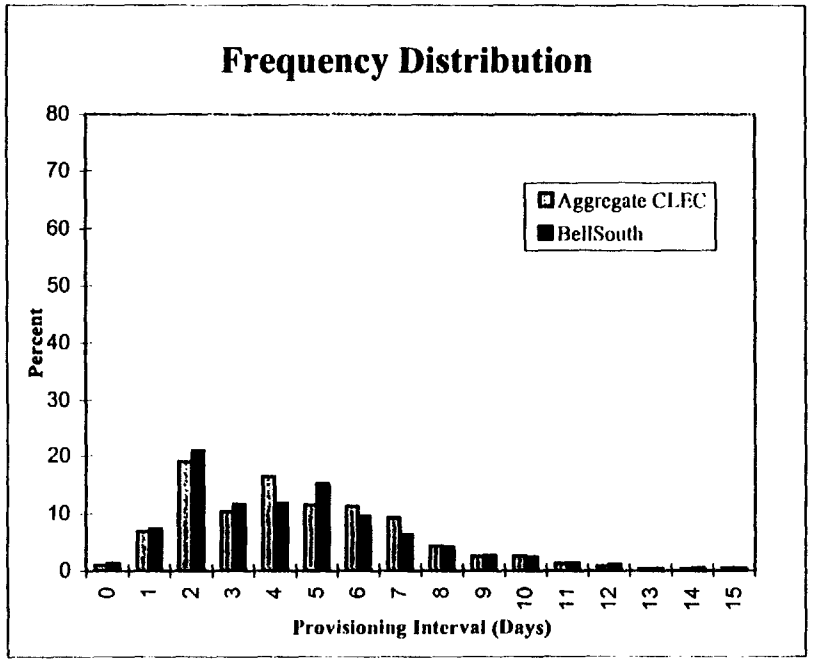
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.27 | 2.38 |
| CLEC | 1.95 | 2.50 |
| Difference | -0.68 | |

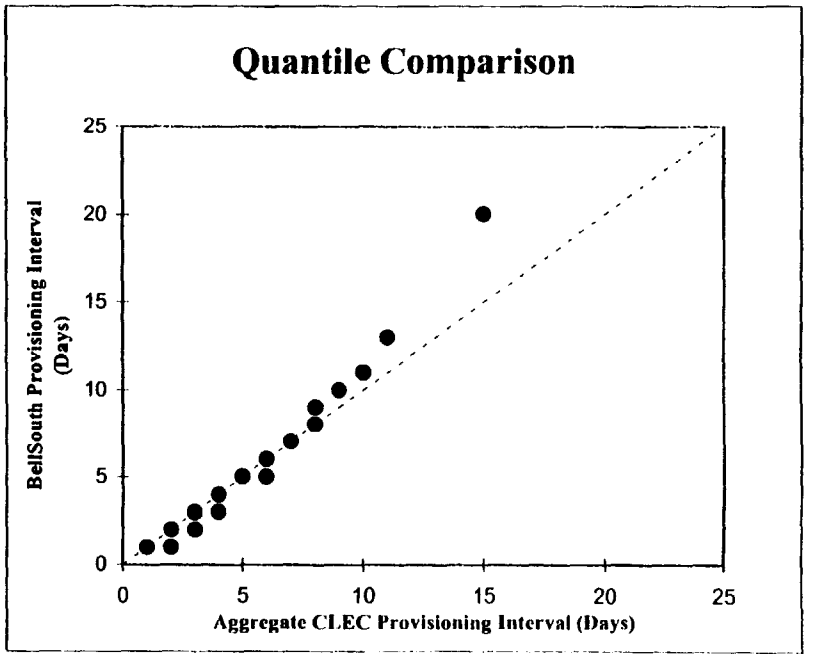
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -34.35 | 0.0000 |
| FCC | -34.27 | 0.0000 |
| BST | -9.93 | 0.0000 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Residential, All Circuits




**Descriptive Measures**

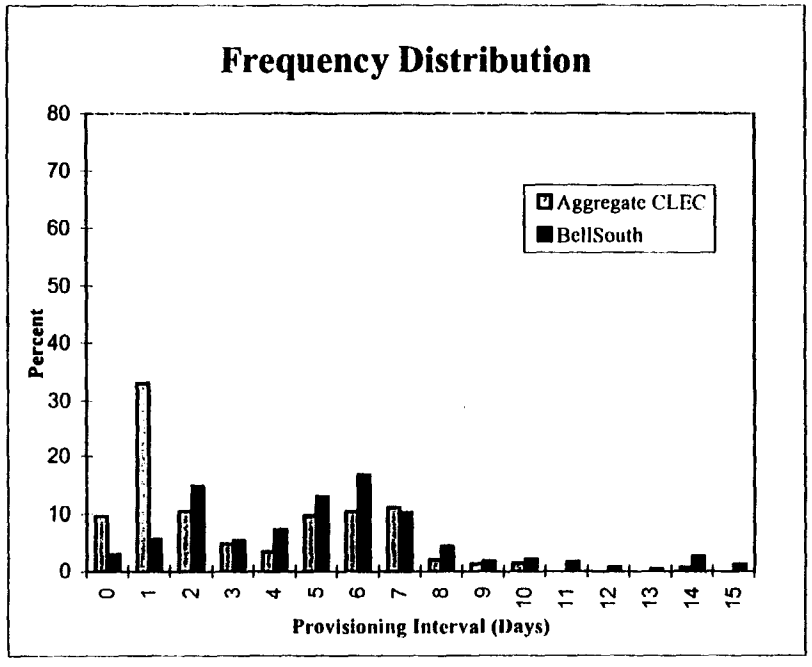
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 5.05 | 4.48 |
| CLEC | 4.93 | 3.59 |
| Difference | 0.12 | |

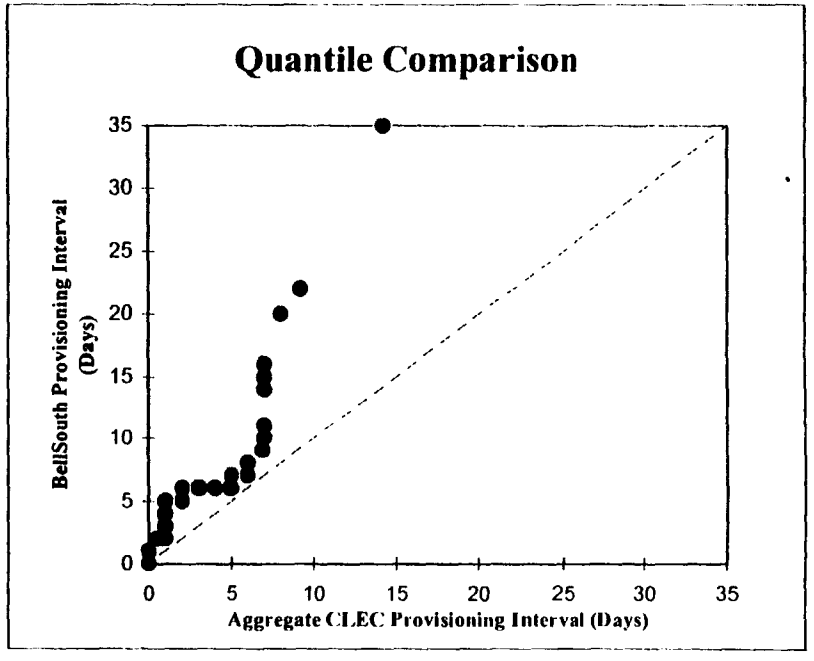
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 0.89 | 18.6182 |
| FCC | 0.90 | 18.3006 |
| BST | 0.78 | 22.0733 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Business, All Circuits




**Descriptive Measures**

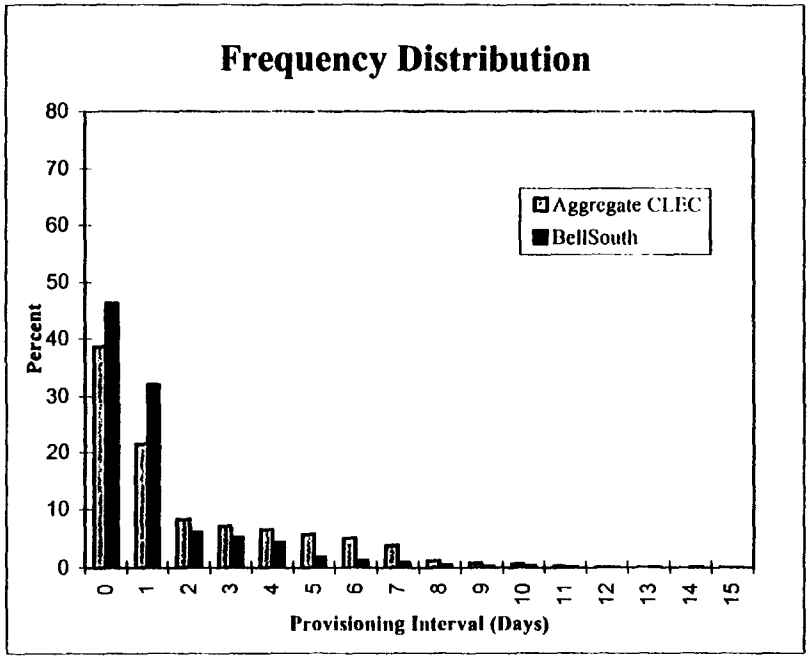
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 7.20 | 8.20 |
| CLEC | 3.75 | 4.39 |
| Difference | 3.45 | |

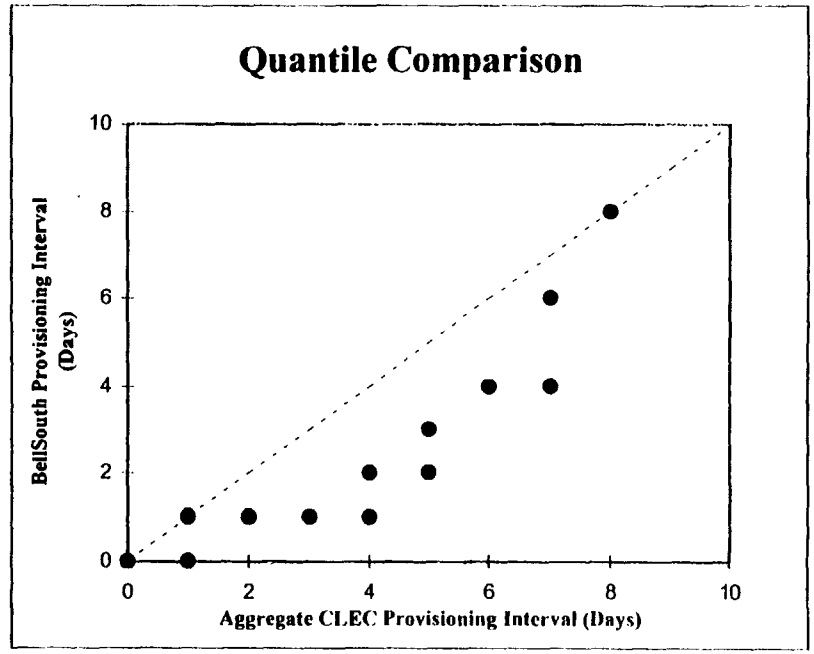
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 5.00 | 0.0000 |
| FCC | 5.05 | 0.0000 |
| BST | 2.17 | 2.0650 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Residential, All Circuits




**Descriptive Measures**

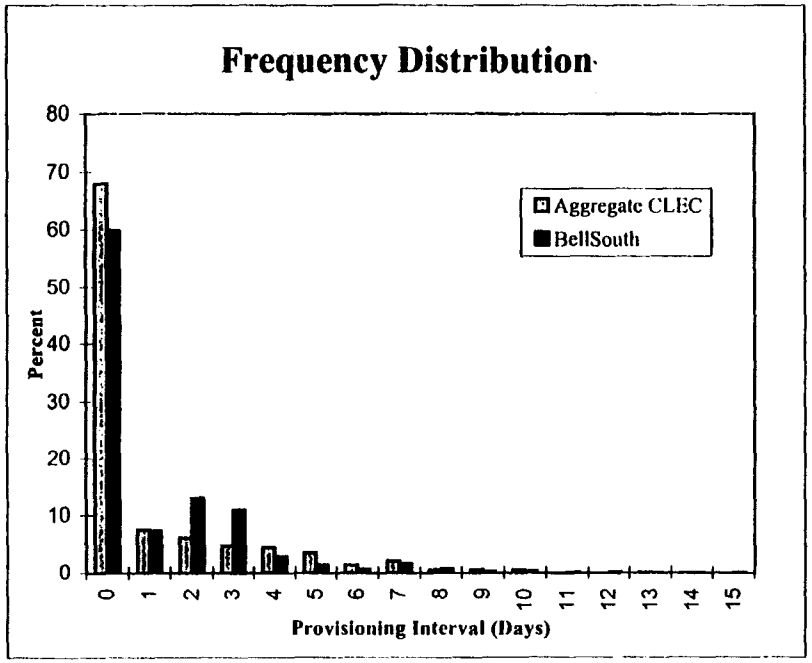
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.26 | 2.33 |
| CLEC | 2.01 | 2.48 |
| Difference | -0.75 | |

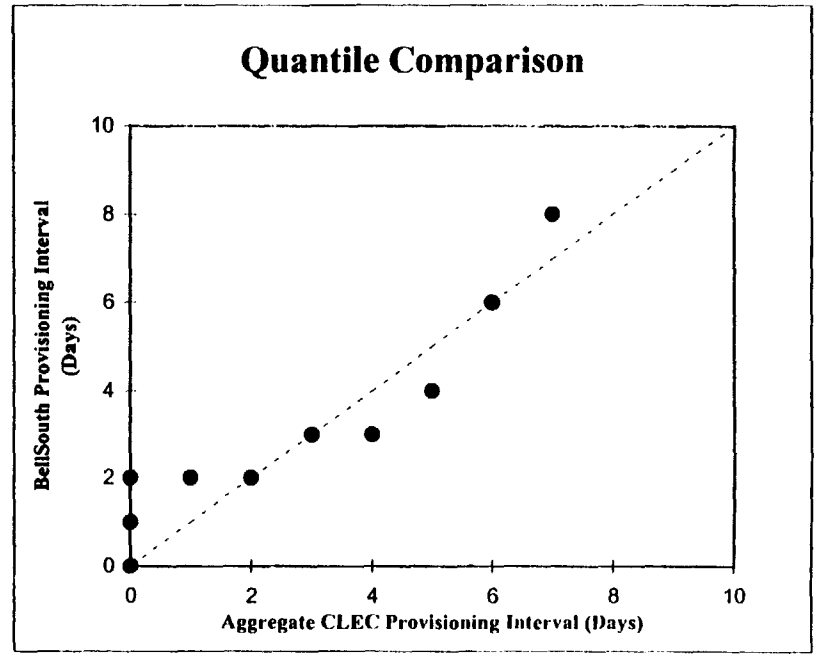
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -37.16 | 0.0000 |
| FCC | -37.05 | 0.0000 |
| BST | -11.75 | 0.0000 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Business, All Circuits




**Descriptive Measures**

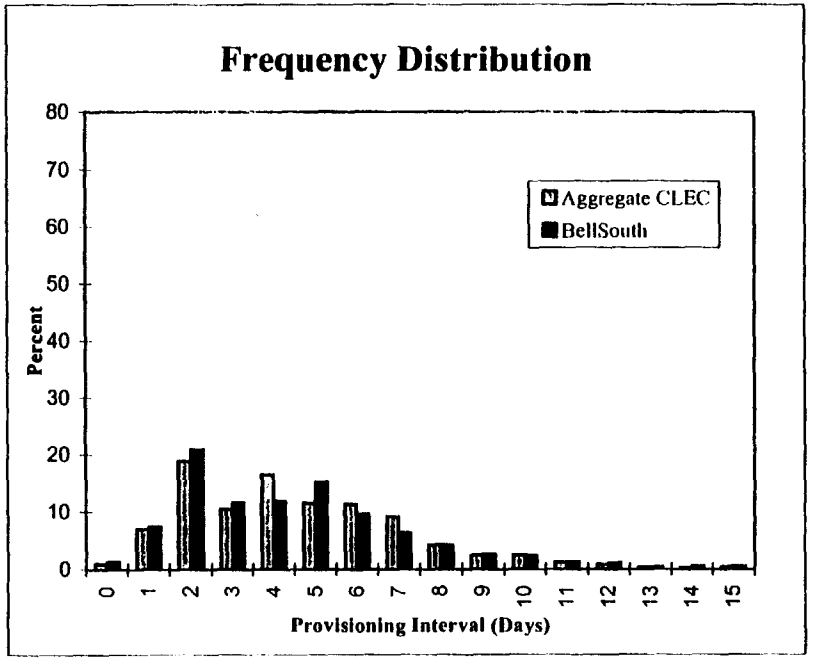
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.27 | 2.47 |
| CLEC | 1.13 | 2.19 |
| Difference | 0.14 | |

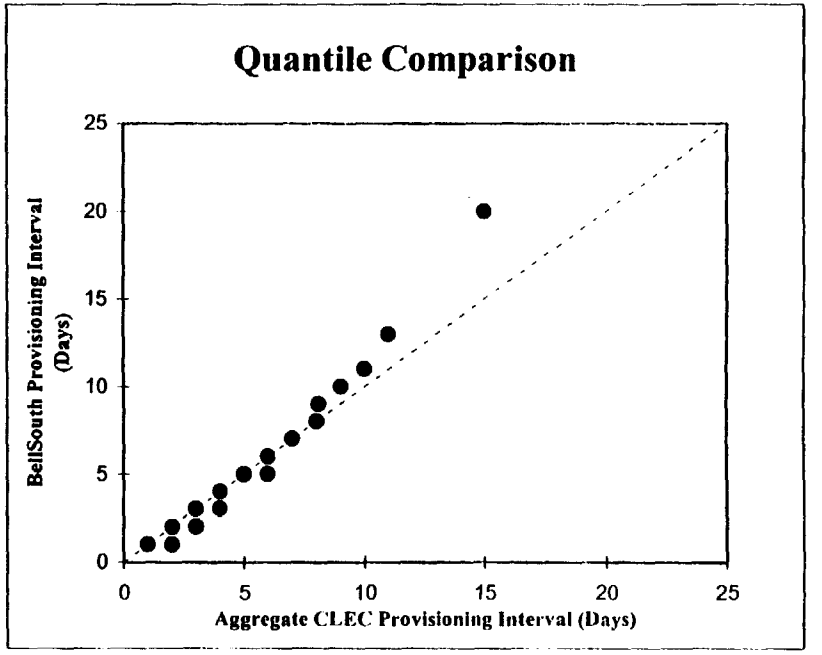
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 2.01 | 2.2195 |
| FCC | 2.02 | 2.1814 |
| BST | 0.49 | 31.4900 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Residential, Less Than 10 Circuits




**Descriptive Measures**

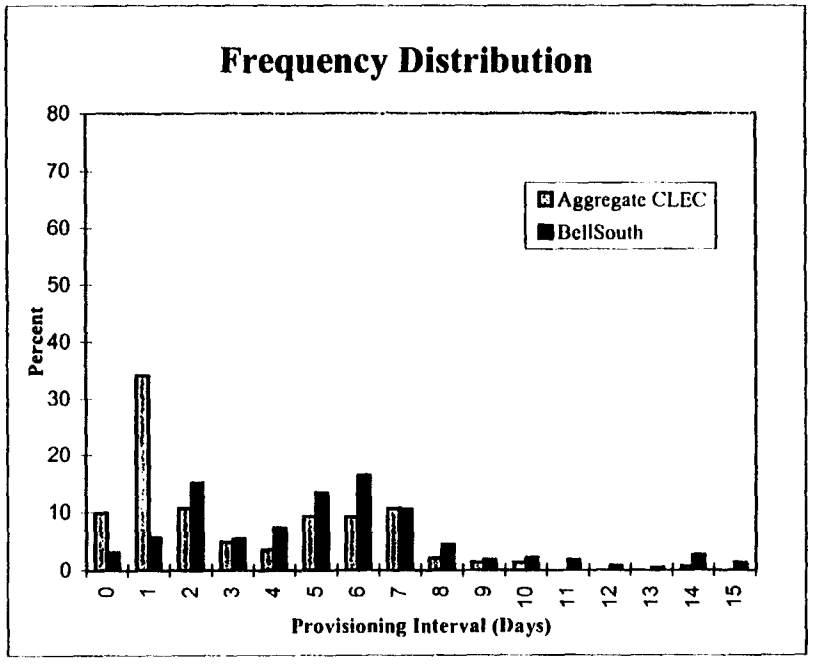
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 5.05 | 4.48 |
| CLEC | 4.93 | 3.59 |
| Difference | 0.12 | |

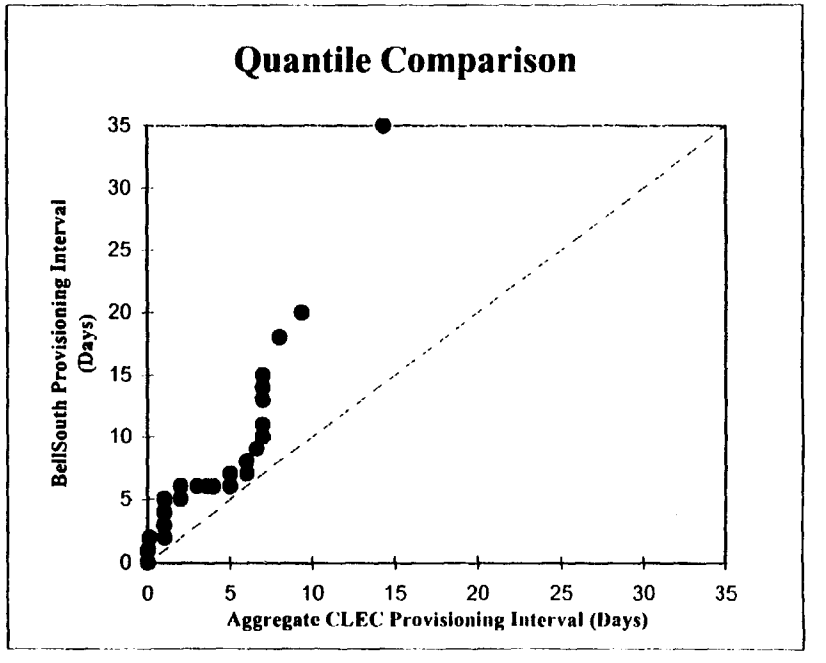
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 0.90 | 18.4376 |
| FCC | 0.91 | 18.1197 |
| BST | 0.78 | 22.0708 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Dispatched, Business, Less Than 10 Circuits




**Descriptive Measures**

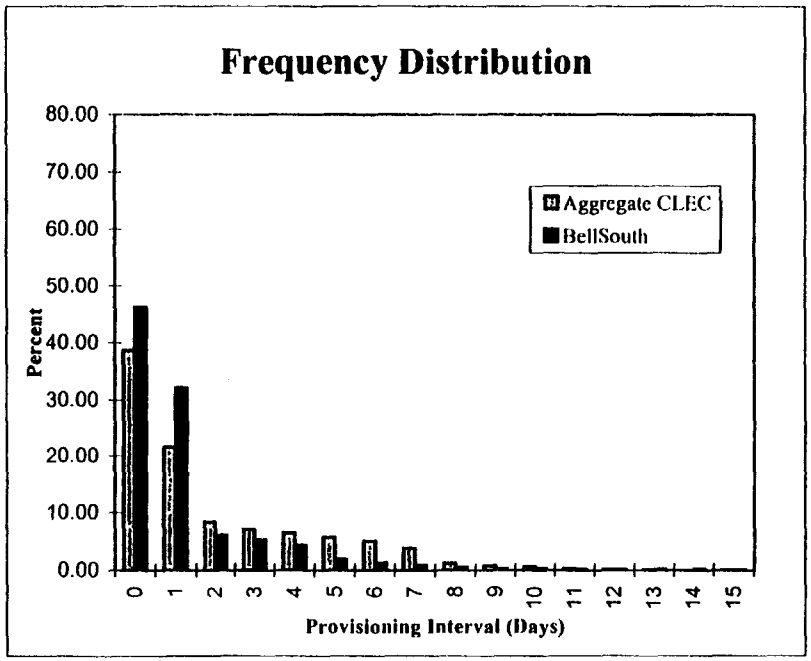
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 6.96 | 8.01 |
| CLEC | 3.69 | 4.43 |
| Difference | 3.27 | |

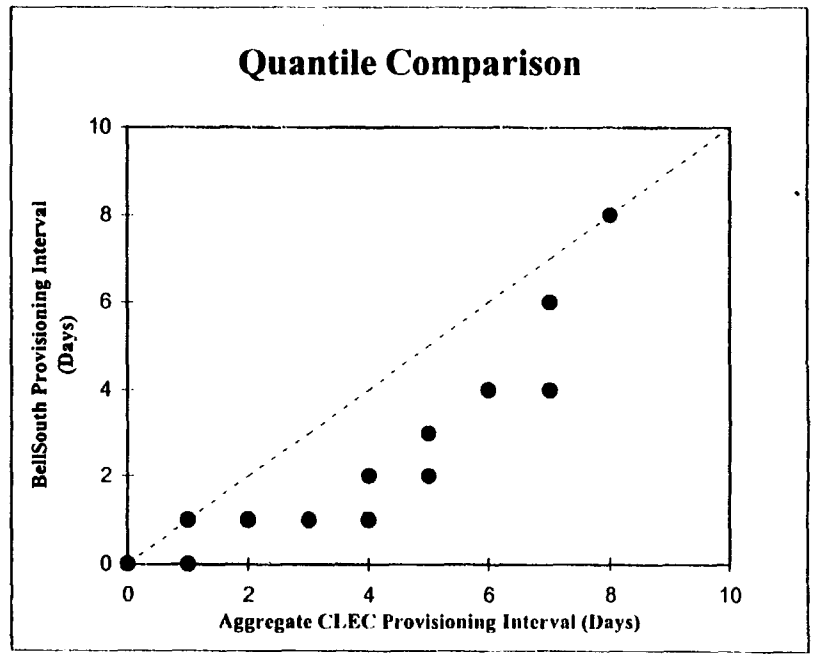
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 4.78 | 0.0001 |
| FCC | 4.83 | 0.0001 |
| BST | 2.07 | 2.5419 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services. The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Residential, Less Than 10 Circuits




**Descriptive Measures**

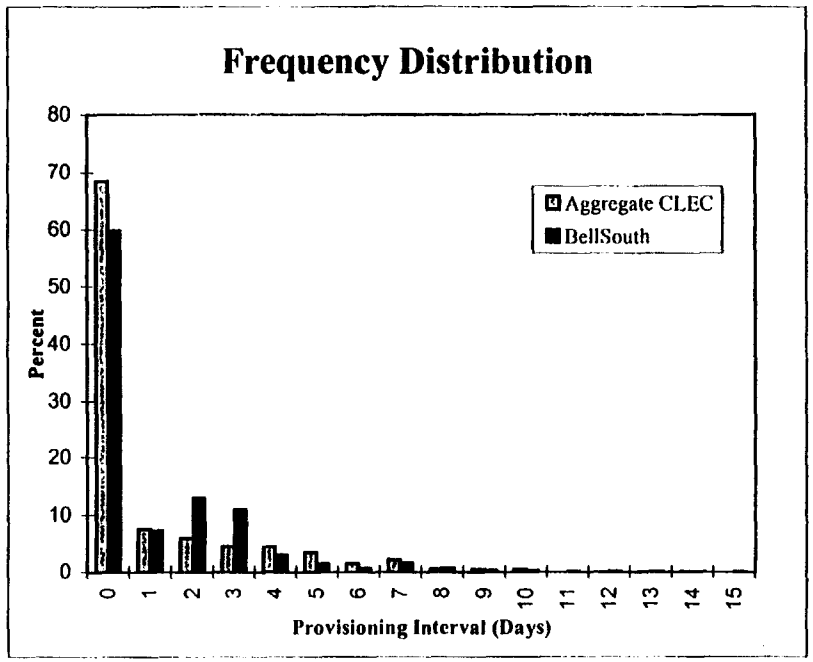
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.26 | 2.33 |
| CLEC | 2.01 | 2.48 |
| Difference | -0.75 | |

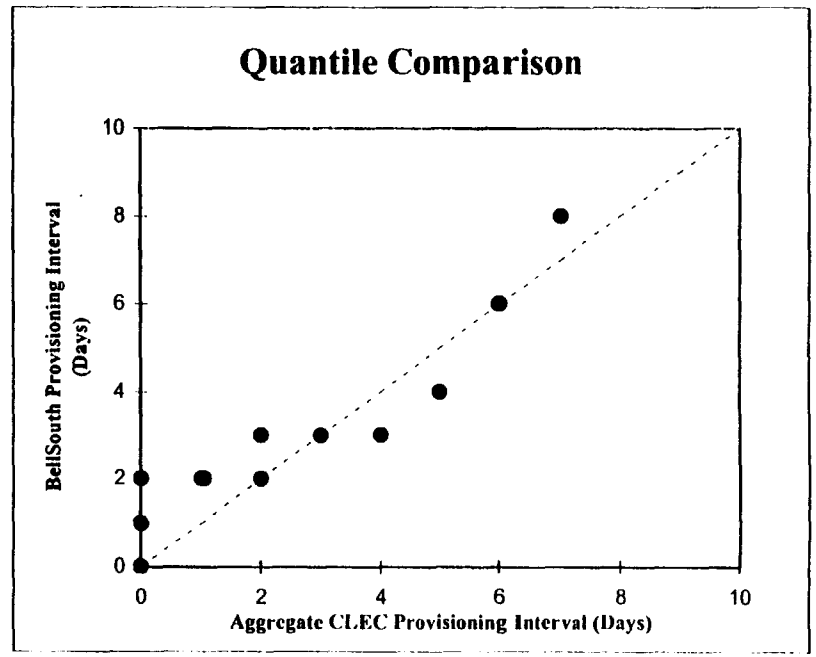
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -37.15 | 0.0000 |
| FCC | -37.04 | 0.0000 |
| BST | -11.75 | 0.0000 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# Adjusted
# September BellSouth and CLEC Completion Interval-Provisioning
## Non-Dispatched, Business, Less Than 10 Circuits




**Descriptive Measures**

| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 1.27 | 2.47 |
| CLEC | 1.12 | 2.19 |
| Difference | 0.15 | |

**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 2.15 | 1.5811 |
| FCC | 2.16 | 1.5505 |
| BST | 0.52 | 30.3765 |

*Data used in analysis does not include any records with missed appointments due to customer rescheduling or records corresponding to official services.*
*The application of statistical trimming removed records with completion interval-provisioning of above 99 days. This resulted in the removal of no CLEC records and 0.004% of the BellSouth records.*

# SQM: Order Completion Interval

**SEPTEMBER**

| | NO DISPATCH | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAME DAY | | 1 DAY | | 2 DAYS | | 3 DAYS | | 4 DAYS | | 5 DAYS | | > 5 DAYS | | AVG. (DAYS) | |
| | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts |
| CLEC 1 | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| CLEC AGGREGATE | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RESALE RESIDENCE | 38.45% | 0.00% | 21.68% | 0.00% | 8.47% | 0.00% | 7.24% | 0.00% | 6.54% | 0.00% | 5.73% | 100.00% | 11.90% | 0.00% | 2.01 | 5.00 |
| - RESALE BUSINESS | 64.94% | 0.00% | 8.38% | 0.00% | 7.93% | 42.86% | 4.95% | 42.86% | 4.67% | 0.00% | 3.66% | 14.29% | 5.56% | 0.00% | 1.20 | 2.86 |
| - UNE LOOPS WITH LNP | | | | | | | | | | | | | | | | |
| BST | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RETAIL RESIDENCE | 59.13% | 0.00% | 25.51% | 0.00% | 4.14% | 0.00% | 5.88% | 0.00% | 3.21% | 0.00% | 0.59% | 0.00% | 1.53% | 0.00% | 0.83 | 0.00 |
| - RETAIL BUSINESS | 54.86% | 53.54% | 7.39% | 16.54% | 18.50% | 10.24% | 10.10% | 0.79% | 3.96% | 3.94% | 1.37% | 4.72% | 3.82% | 10.24% | 1.39 | 1.77 |

| | NO DISPATCH | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 DAYS | | 6-10 DAYS | | 11-15 DAYS | | 16-20 DAYS | | 21-25 DAYS | | 26-30 DAYS | | > 30 DAYS | | AVG (DAYS) | |
| | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts | < 10 Ckts | >= 10 Ckts |
| CLEC 1 | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| CLEC AGGREGATE | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RESALE DESIGN | 76.92% | 0.00% | 7.69% | 0.00% | 9.62% | 0.00% | 0.00% | 0.00% | 3.85% | 0.00% | 1.92% | 0.00% | 0.00% | 0.00% | 5.83 | 0.00 |
| - UNE DESIGN | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00 | 0.00 |
| - UNE NON-DESIGN | 93.94% | 0.00% | 3.03% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 3.03% | 0.00% | 1.97 | 0.00 |
| BST | | | | | | | | | | | | | | | | |
| LOUISIANA | | | | | | | | | | | | | | | | |
| - RETAIL DESIGN | 25.49% | 0.00% | 23.53% | 0.00% | 28.76% | 0.00% | 0.65% | 0.00% | 4.58% | 0.00% | 3.92% | 0.00% | 13.07% | 0.00% | 14.46 | 0.00 |

**Definitions**

**issue date -- Date service order is entered into the system (not necessarily same as application date)**

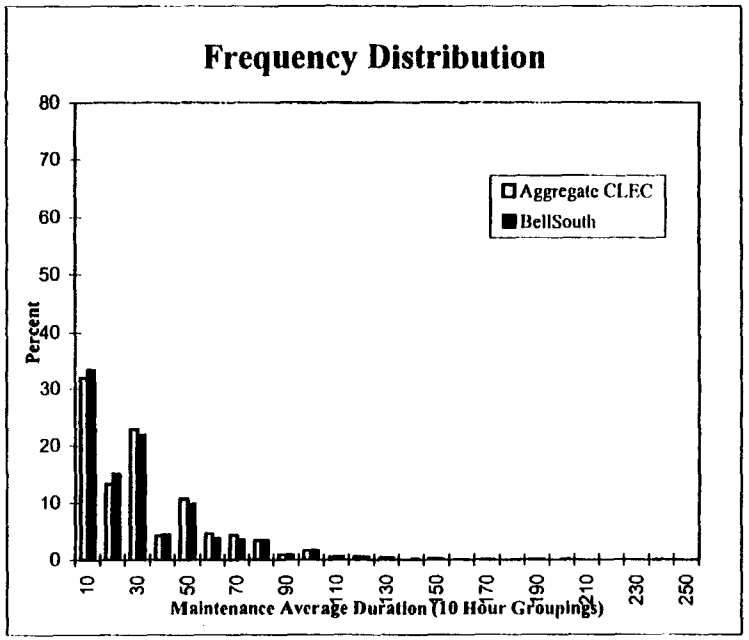
**completion date -- Date on which service order is completed**

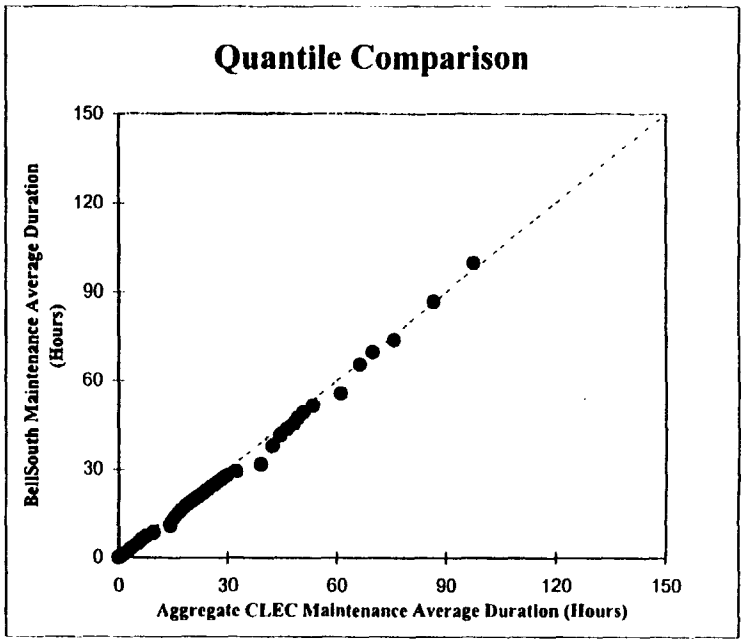
**order completion interval -- computed as order completion interval = completion date - issue date**

# Appendix E
# Maintenance Average Duration (MAD) - August Graphics

I. Graphical Representations

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, All Cases




**Descriptive Measures**

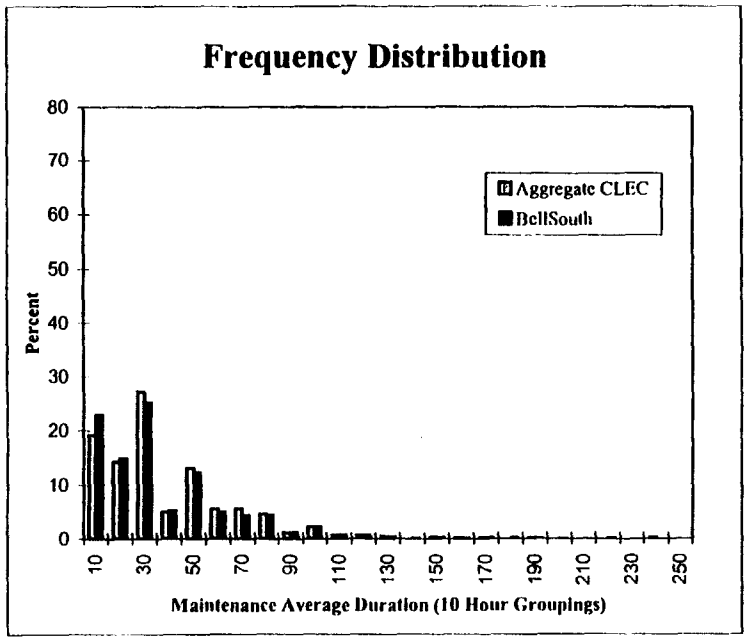
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 26.51 | 27.05 |
| CLEC | 27.89 | 27.48 |
| Difference | -1.38 | |

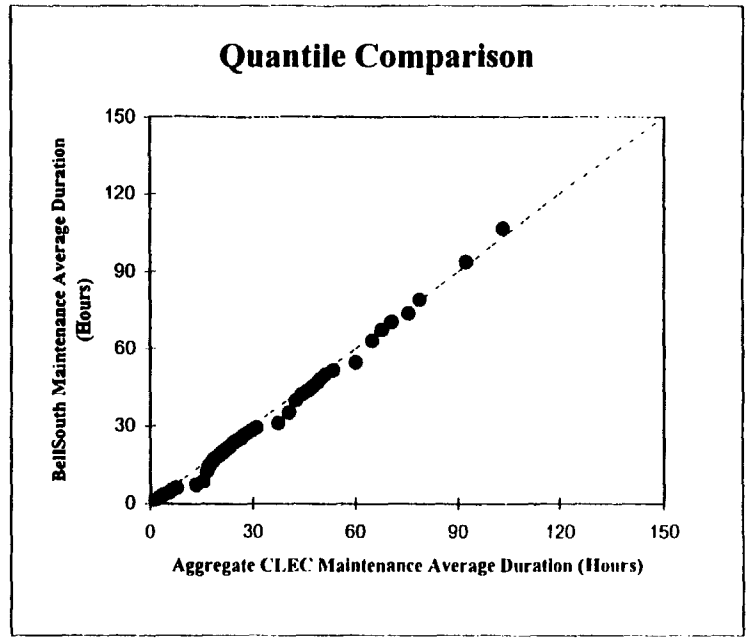
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -1.91 | 2.7770 |
| FCC | -1.91 | 2.7809 |
| BST | -1.93 | 3.1656 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched




**Descriptive Measures**

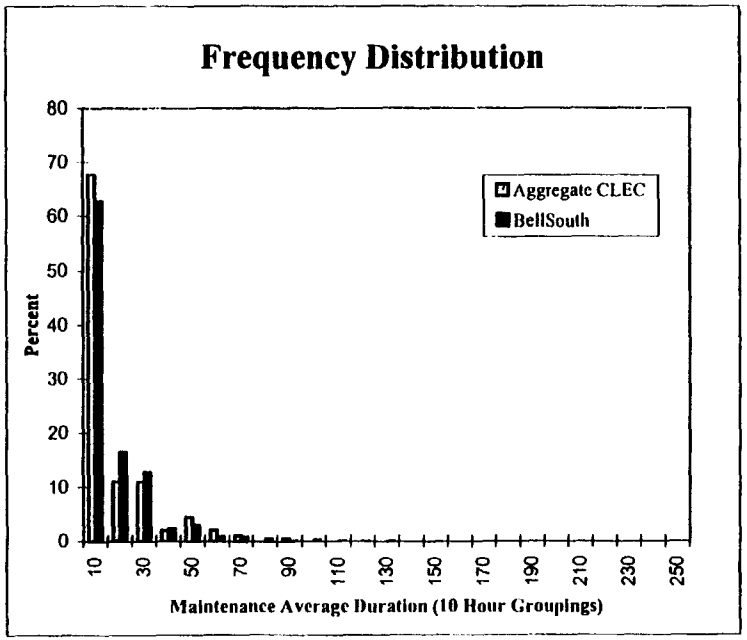
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 32.05 | 28.15 |
| CLEC | 33.95 | 28.35 |
| Difference | -1.89 | |

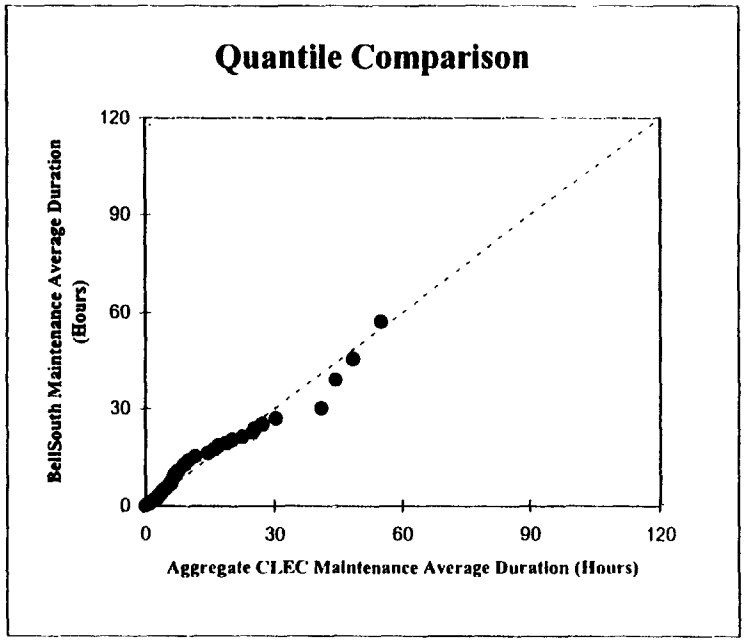
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -2.16 | 1.5392 |
| FCC | -2.16 | 1.5406 |
| BST | -2.06 | 2.4400 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Non-Dispatched




**Descriptive Measures**

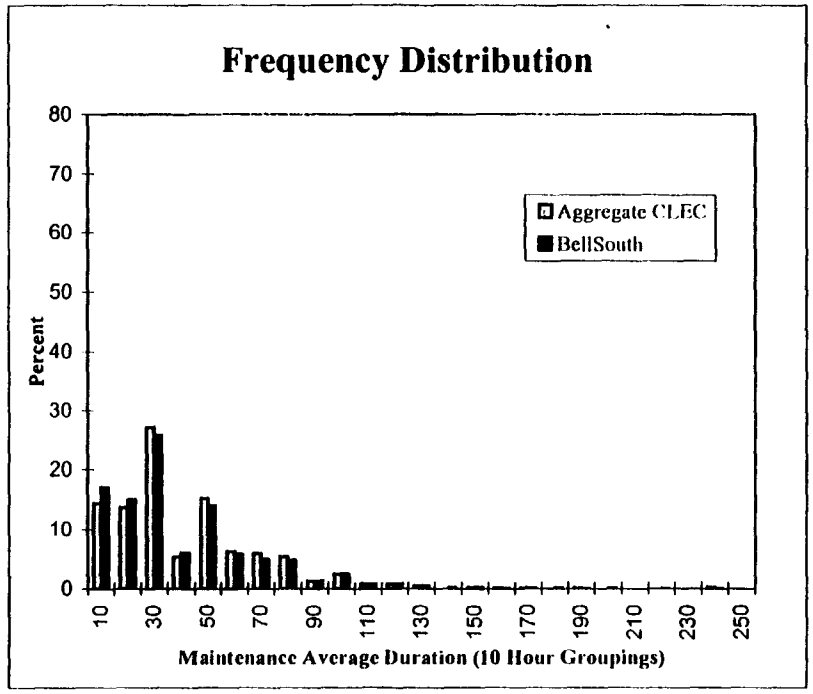
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 11.11 | 15.49 |
| CLEC | 11.10 | 15.40 |
| Difference | 0.01 | |

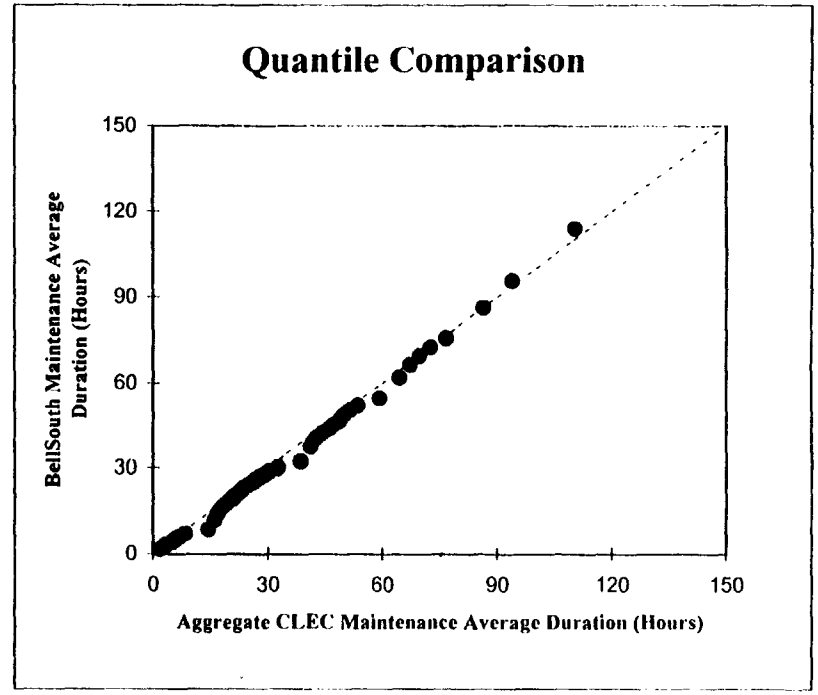
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 0.01 | 49.6660 |
| FCC | 0.01 | 49.6660 |
| BST | -0.01 | 49.6851 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched, Residential




**Descriptive Measures**

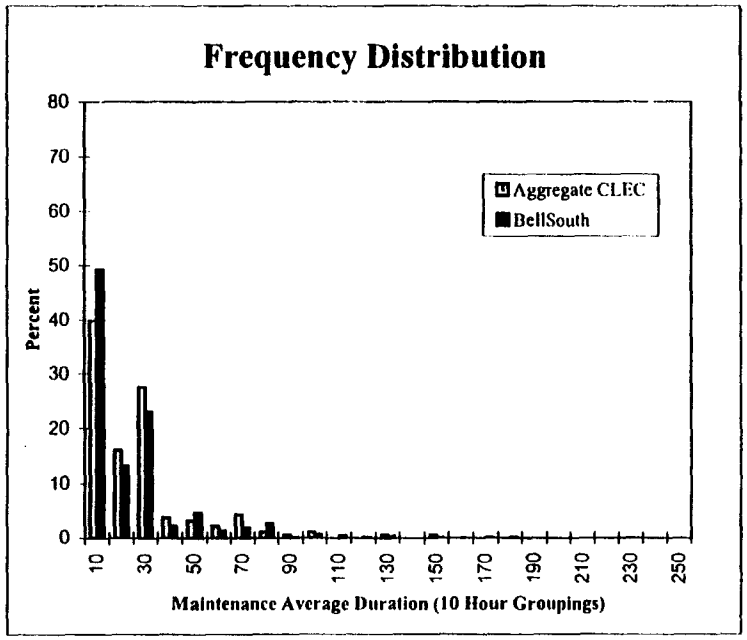
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 35.05 | 28.44 |
| CLEC | 36.77 | 28.75 |
| Difference | -1.73 | |

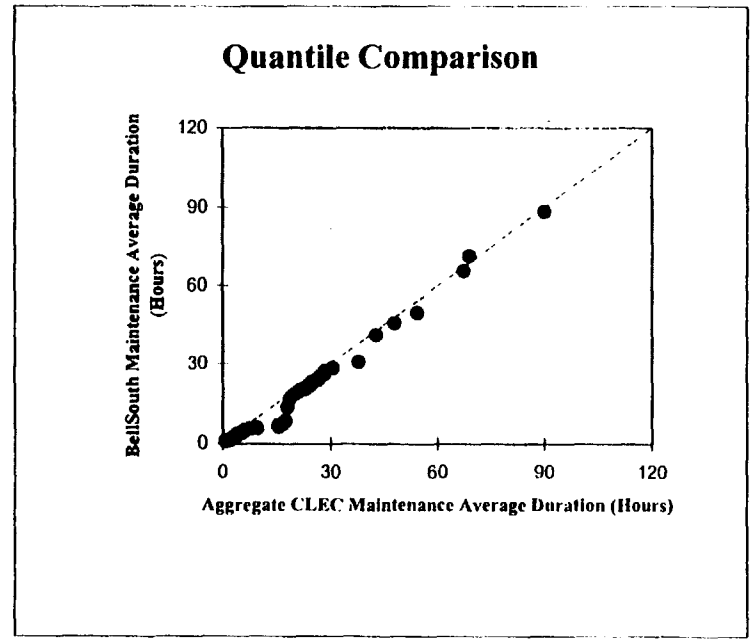
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -1.76 | 3.9116 |
| FCC | -1.76 | 3.9157 |
| BST | -1.80 | 4.1290 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched, Business




**Descriptive Measures**

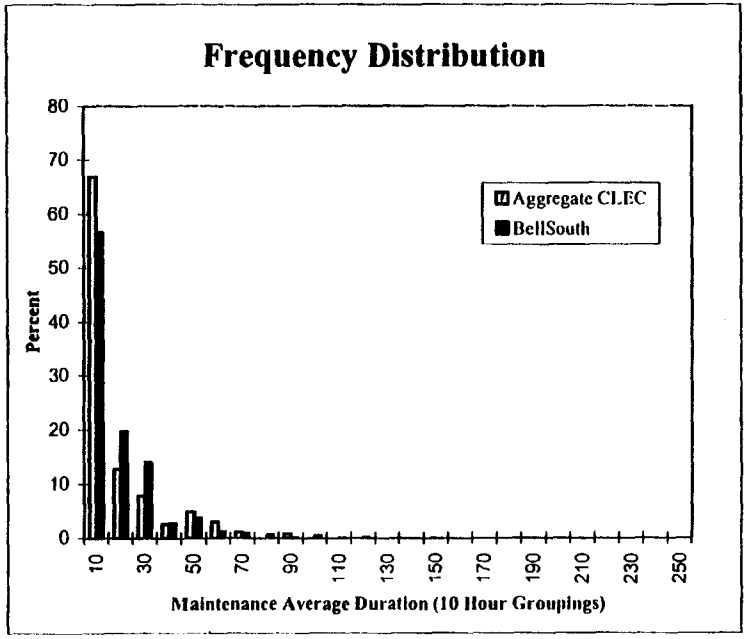
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 18.64 | 22.41 |
| CLEC | 21.29 | 22.49 |
| Difference | -2.65 | |

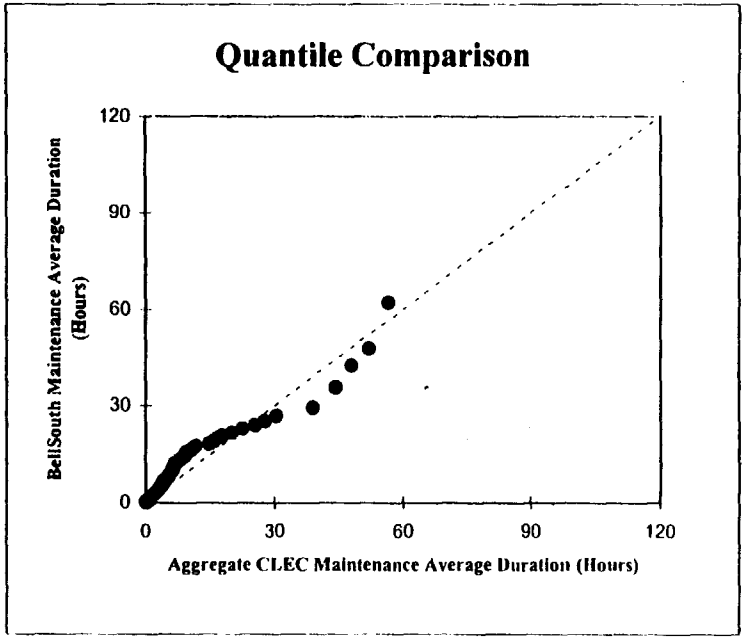
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -1.62 | 5.2464 |
| FCC | -1.62 | 5.2479 |
| BST | -0.89 | 19.0851 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Non-Dispatched, Residential




**Descriptive Measures**

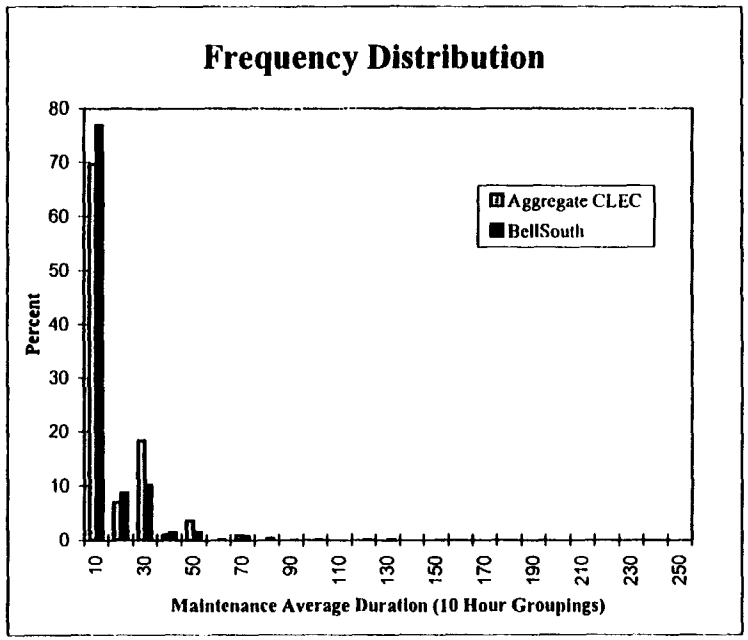
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 12.74 | 16.05 |
| CLEC | 11.80 | 16.46 |
| Difference | 0.94 | |

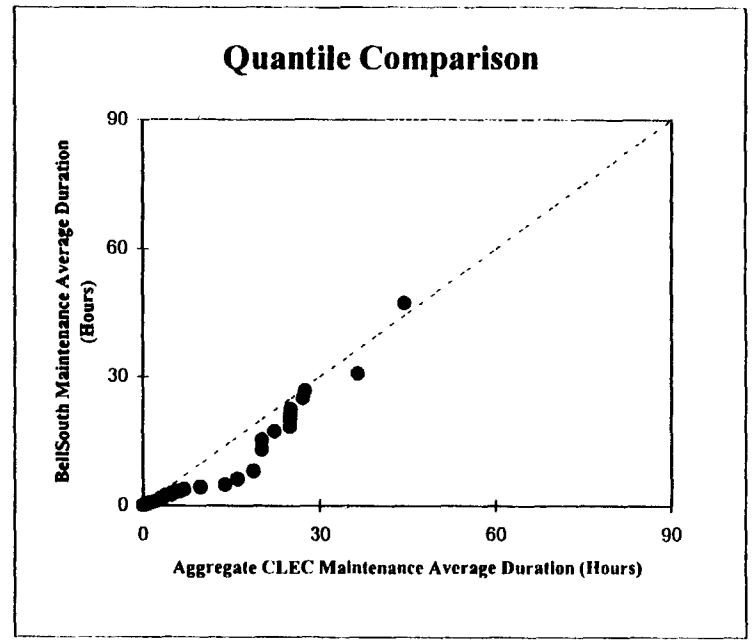
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 0.95 | 17.1340 |
| FCC | 0.95 | 17.1407 |
| BST | 0.79 | 21.8735 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# August BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Non-Dispatched, Business




**Descriptive Measures**

| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 7.34 | 13.46 |
| CLEC | 9.47 | 12.52 |
| Difference | -2.13 | |

**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -1.68 | 4.6902 |
| FCC | -1.68 | 4.6589 |
| BST | -1.55 | 6.7569 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

**RETAIL SERVICES: BST - BST Aggregate**

**Report Period: 08/01/1998 to 08/31/1998**

**SQM: Maintenance Average Duration**
**Non-detailed Report**

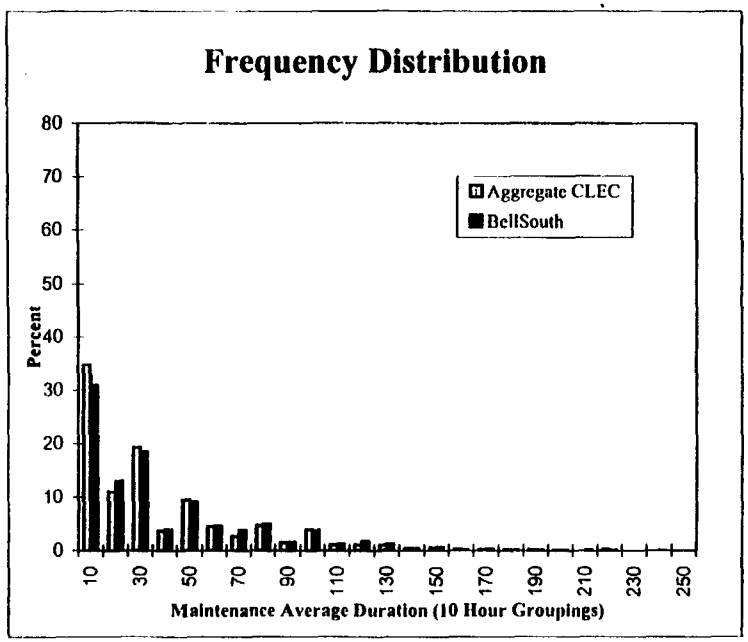
| | Residence | | | Business | | | Res + Bus | | |
|---|---|---|---|---|---|---|---|---|---|
| | Dispatched | Non-Disp. | Total | Dispatched | Non-Disp. | Total | Dispatched | Non-Disp. | Total |
| ALABAMA | 33.79 | 14.20 | 26.45 | 12.06 | 7.87 | 10.77 | 29.98 | 13.34 | 23.92 |
| FLORIDA | 28.05 | 13.39 | 21.90 | 17.08 | 9.29 | 14.08 | 25.55 | 12.55 | 20.19 |
| GEORGIA | 27.57 | 15.29 | 22.70 | 14.10 | 8.67 | 12.26 | 24.68 | 14.12 | 20.62 |
| KENTUCKY | 38.07 | 18.36 | 31.26 | 19.36 | 6.94 | 15.77 | 35.20 | 16.96 | 29.04 |
| LOUISIANA | 34.08 | 13.06 | 25.21 | 17.77 | 8.44 | 14.69 | 31.01 | 12.43 | 23.45 |
| MISSISSIPPI | 33.55 | 12.11 | 25.18 | 10.30 | 4.79 | 8.54 | 29.53 | 11.14 | 22.55 |
| NORTH CAROLINA | 43.87 | 15.03 | 31.48 | 25.59 | 10.46 | 20.40 | 40.03 | 14.32 | 29.40 |
| SOUTH CAROLINA | 35.50 | 12.88 | 27.06 | 24.84 | 11.68 | 20.72 | 33.34 | 12.68 | 25.87 |
| TENNESSEE | 60.00 | 23.64 | 44.88 | 20.64 | 9.00 | 16.93 | 53.54 | 21.97 | 40.85 |
| REGION | 35.97 | 15.36 | 27.63 | 17.70 | 8.97 | 14.69 | 32.32 | 14.33 | 25.24 |

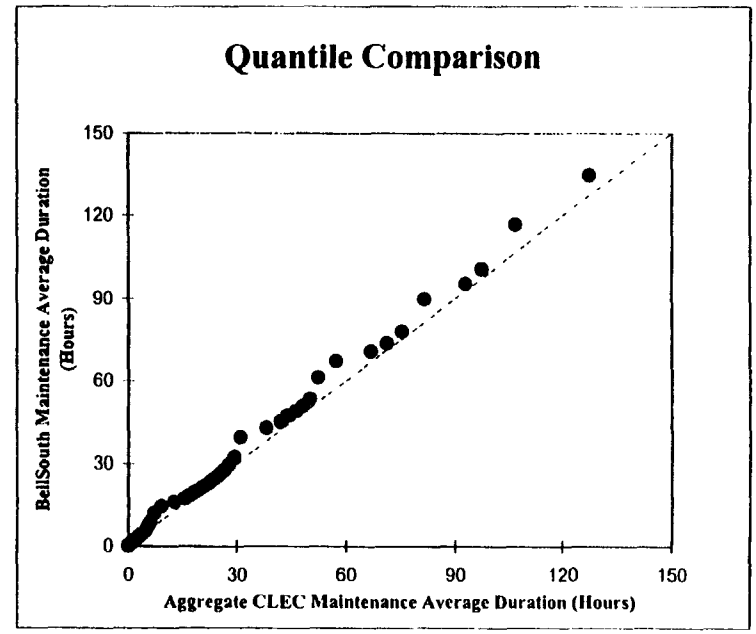
*NA = Not Applicable (NA indicates measurements that do not apply to the particular measure)*
*Blank cells occur as a result of either no activity or when a divide by zero error would result.*

# Appendix F
# Maintenance Average Duration (MAD) - September Graphics

I. Graphical Representations

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, All Cases




**Descriptive Measures**

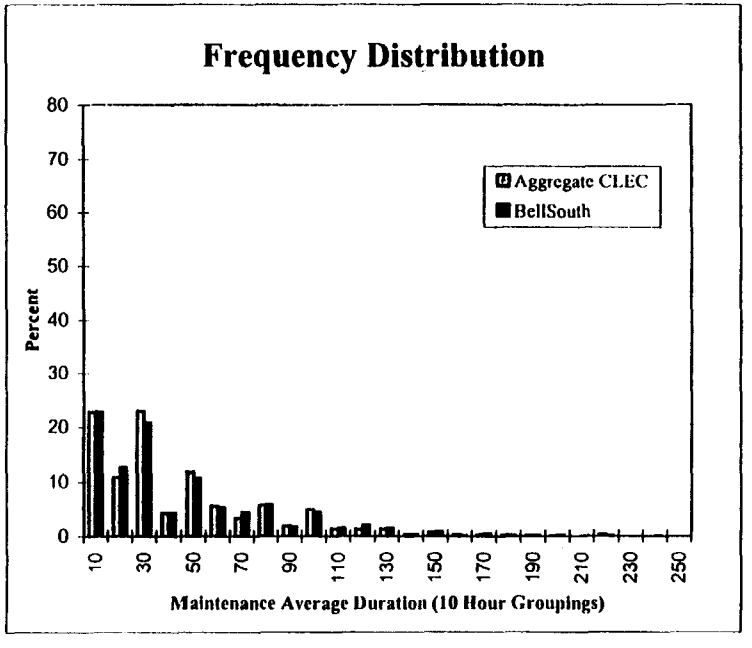
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 34.55 | 36.23 |
| CLEC | 32.23 | 35.15 |
| Difference | 2.32 | |

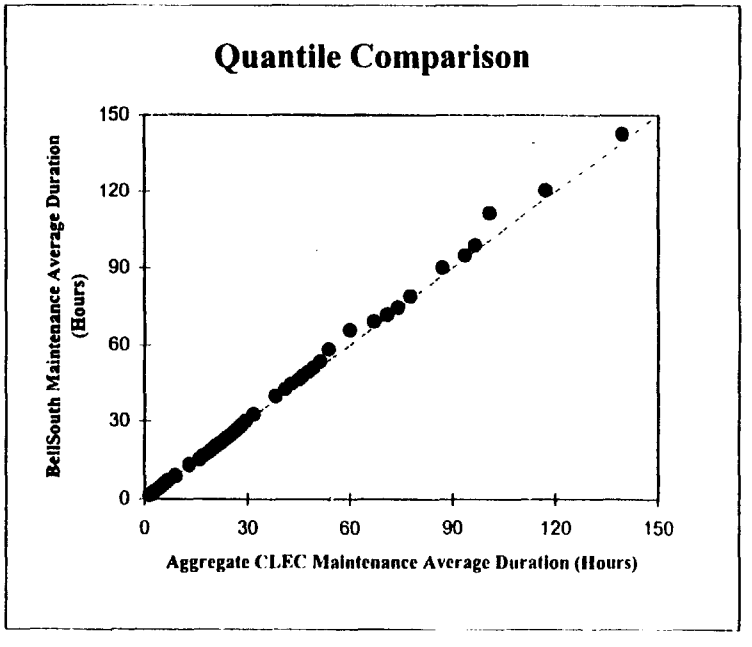
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 2.81 | 0.2448 |
| FCC | 2.82 | 0.2435 |
| BST | 2.43 | 1.0729 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched




**Descriptive Measures**

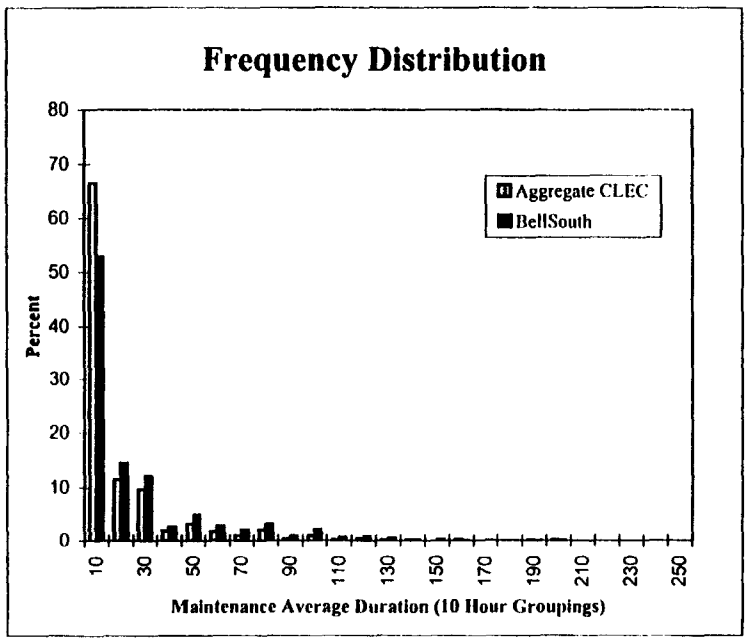
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 39.94 | 37.28 |
| CLEC | 39.11 | 36.09 |
| Difference | 0.83 | |

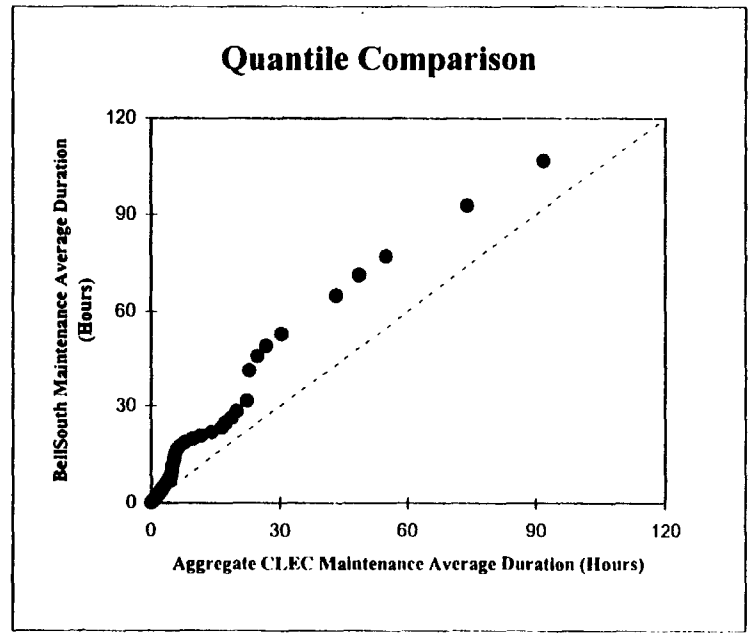
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 0.83 | 20.2465 |
| FCC | 0.83 | 20.2276 |
| BST | 0.68 | 25.0975 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Non-Dispatched




**Descriptive Measures**

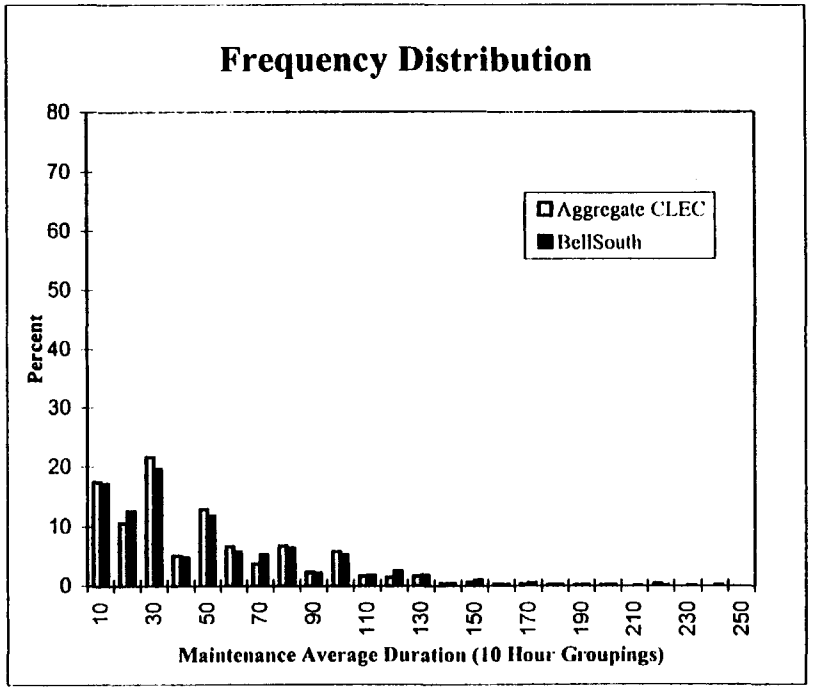
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 20.31 | 28.79 |
| CLEC | 14.01 | 24.52 |
| Difference | 6.30 | |

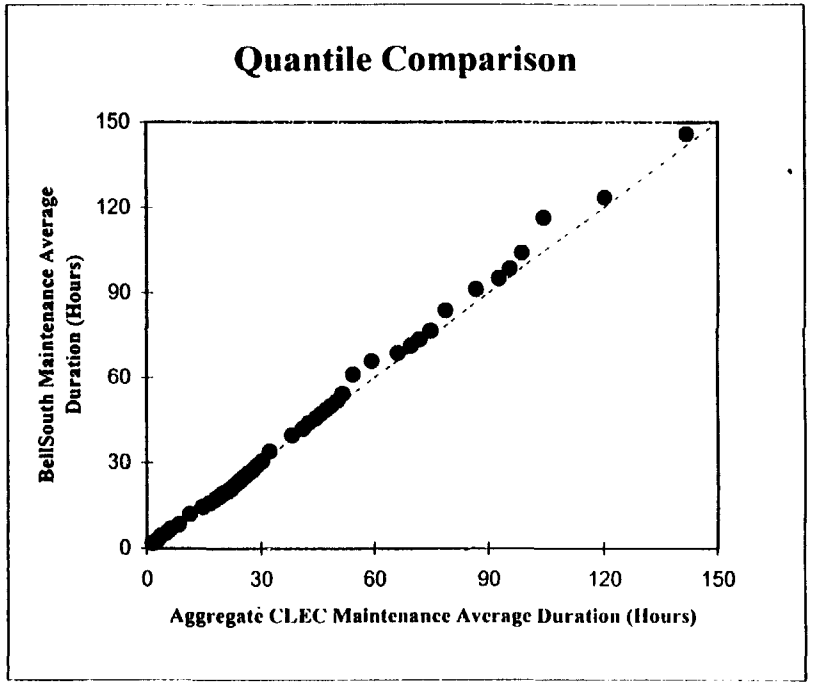
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 5.05 | 0.0000 |
| FCC | 5.06 | 0.0000 |
| BST | 5.55 | 0.0003 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched, Residential




**Descriptive Measures**

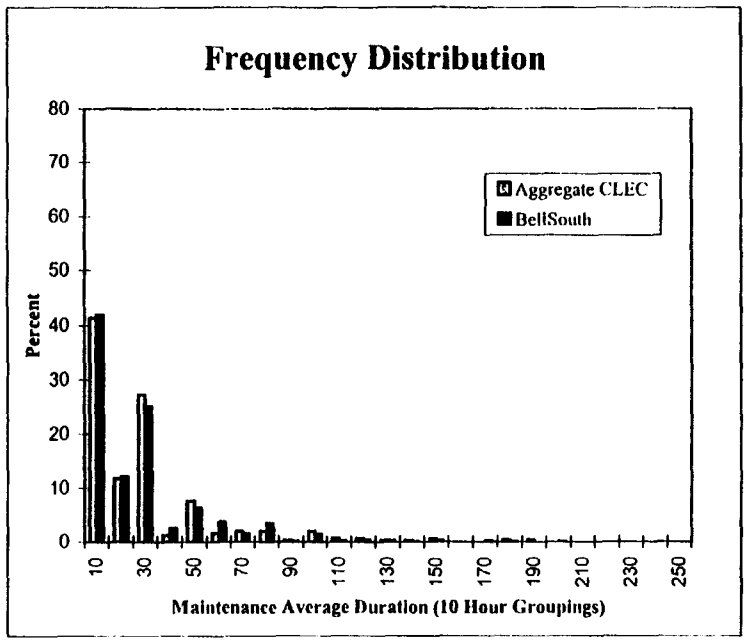
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 44.73 | 38.50 |
| CLEC | 43.41 | 36.81 |
| Difference | 1.32 | |

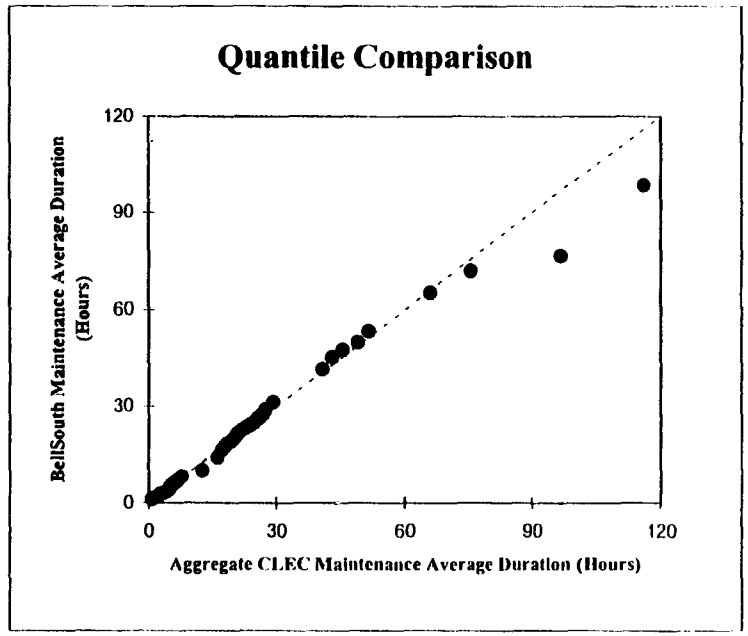
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 1.13 | 12.8696 |
| FCC | 1.13 | 12.8447 |
| BST | 0.99 | 16.5790 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Dispatched, Business




**Descriptive Measures**

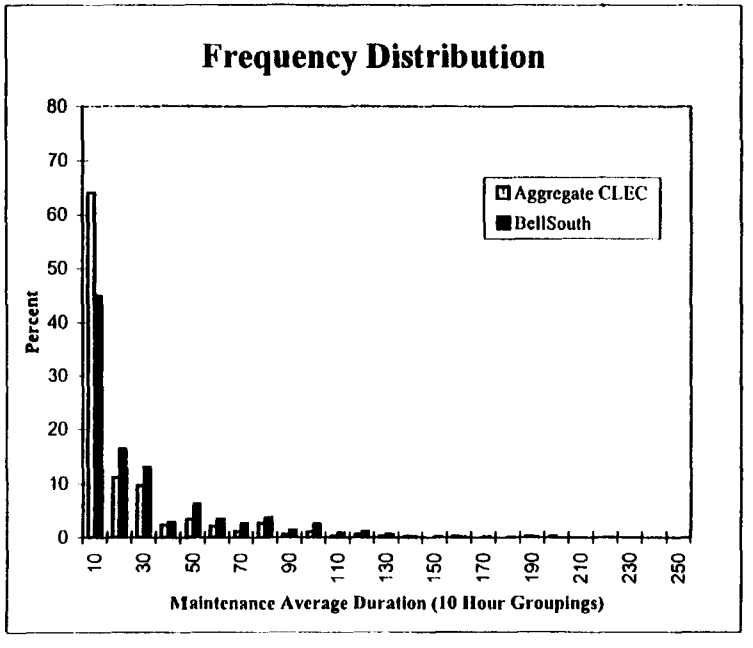
| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 22.98 | 26.44 |
| CLEC | 23.90 | 28.70 |
| Difference | -0.92 | |

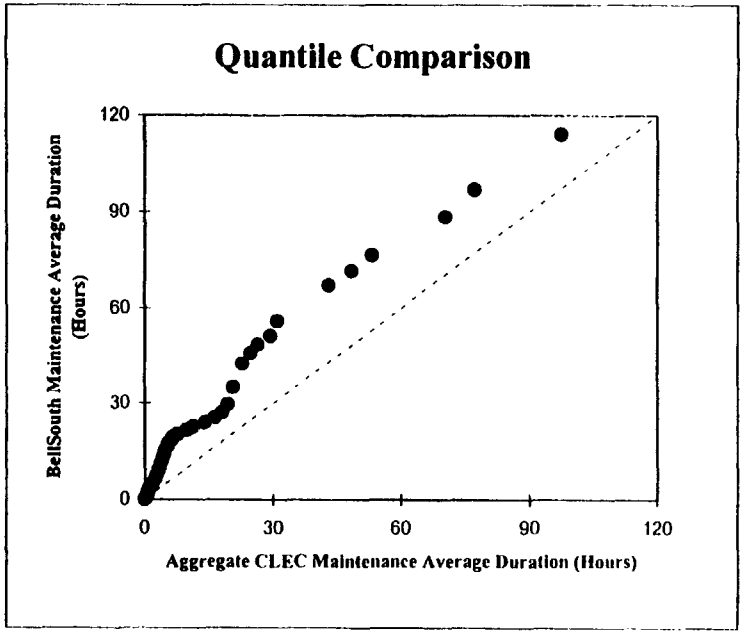
**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | -0.61 | 27.0616 |
| FCC | -0.61 | 27.1166 |
| BST | -0.41 | 34.1136 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*

# Adjusted
# September BellSouth and CLEC Average Duration-Maintenance
## Non-Designed, Non-Dispatched, Residential




**Descriptive Measures**

| Service Provider | Mean | Standard Deviation |
|---|---|---|
| BST | 24.24 | 30.70 |
| CLEC | 15.99 | 27.27 |
| Difference | 8.25 | |

**Analytic Measures**

| Testing Method | Test Statistic | P-value (percent) |
|---|---|---|
| LCUG | 5.23 | 0.0000 |
| FCC | 5.24 | 0.0000 |
| BST | 5.30 | 0.0005 |

*Data used in analysis includes only direct customer reports. The results exclude in public service lines and durations > 240 hours*